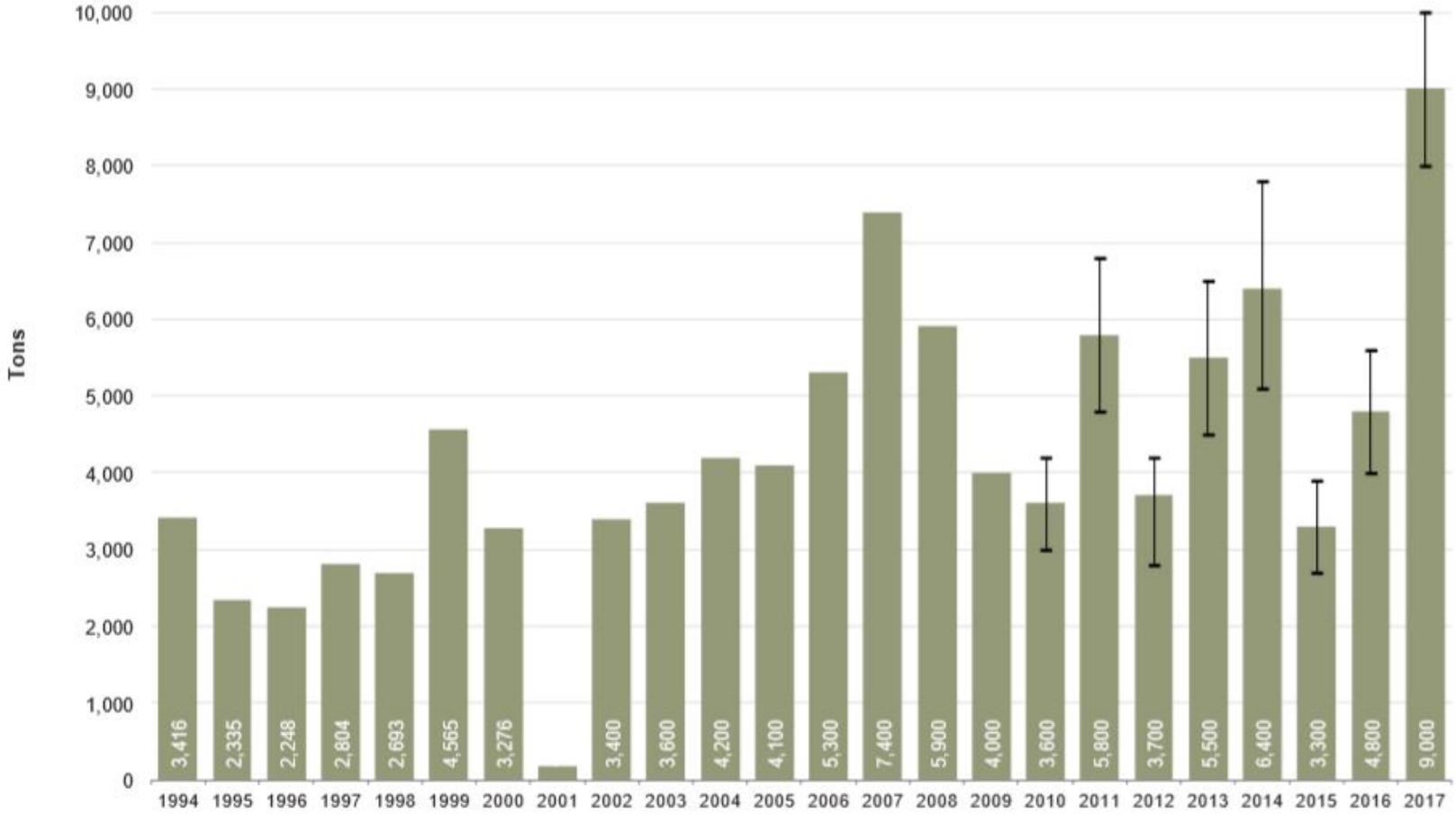
Session 11

Afghan Heroin, Mexican Black Tar, and Fentanyl

In Session 3 we saw how opium production in the Golden Triangle increased from around 10 tons before WWII to on the order of 1,000 tons in the late 1960's, causing a heroin epidemic in the United States. In a very similar fashion, opium production in Afghanistan has increased from less than 2,000 tons in 1998 to 9,000 tons in 2017, resulting in a huge heroin epidemic in Europe and Asia, although most of America's heroin comes from Mexico, which we'll discuss below.

Figure 22: Potential opium production in Afghanistan, 1994-2017 (mt)



Sources: MCN/UNODC opium surveys, 1994-2017. The vertical lines represent the upper and lower bounds of the confidence interval of the estimates. Figures refer to oven-dry opium. Production figures for 2006 to 2009 have been revised in 2012; see MCN/UNODC Afghanistan opium survey 2012.

[INSERT POTENTIAL OPIUM PRODUCTION IN AFGHANISTAN.JPG]

http://www.unodc.org/documents/afghanistan//Afghan_opium_survey_2017_cult_prod_web.pdf

(http://www.unodc.org/documents/afghanistan//Afghan_opium_survey_2017_cult_prod_web.pdf)

Opium was not traditionally an important crop in Afghanistan. According to the United Nations Office on Drugs and Crime **(https://www.unodc.org/documents/afghanistan//Counter_Narcotics/The_Opium_Economy_in_Afghanistan_-_2003.pdf)** , crackdowns on opium cultivation in Iran, Pakistan and Turkey during the 1970's created an opportunity for new entrants into the market which Afghanistan started to meet. The Soviet invasion of Afghanistan in 1979 led to the mobilization of the mujahideen resistance groups by the United States, Saudi Arabia and Pakistan. Many of these groups helped to fund themselves by selling opium:

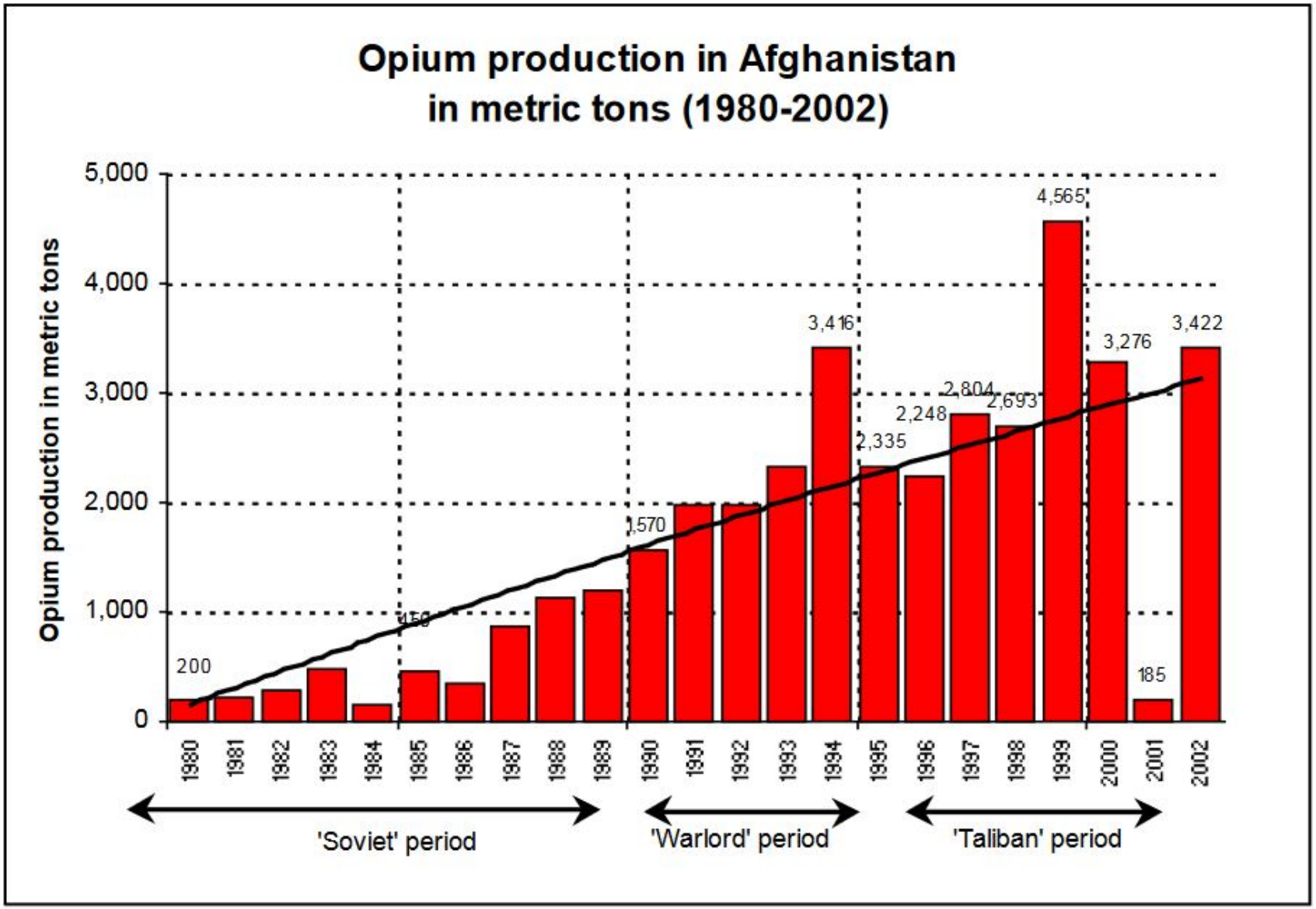


Figure 1
Source: UNODCCP, *Global Illicit Drug Trends 2001* and *2002* and UNODCCP, *Afghanistan Opium Survey 2002*.

https://www.unodc.org/documents/afghanistan//Counter_Narcotics/The_Opium_Economy_in_Afghanistan_-_2003.pdf

(https://www.unodc.org/documents/afghanistan//Counter_Narcotics/The_Opium_Economy_in_Afghanistan_-_2003.pdf) page 81

According to Alfred McCoy **(https://www.theguardian.com/news/2018/jan/09/how-the-heroin-trade-explains-the-us-uk-failure-in-afghanistan)**, by the mid 1980's Pakistan had emerged as the world's leading supplier of heroin, derived from Afghan opium. The United States was aware that its anti-Soviet allies were involved in the drug trade, but as in Indochina in the 1960's and Latin America in the 1970s and 1980s, drug policy took a back seat to global geopolitics. ***"We're not going to let a little thing like drugs get in the way of the political situation," (https://canvas.harvard.edu/courses/41939/files/6876261/download?wrap=1)*** ***(https://canvas.harvard.edu/courses/41939/files/6876261/download?wrap=1)*** *said an Administration official who follows Afghanistan closely, emphasizing that narcotics are relatively a minor issue in the context of policy toward the Afghan guerrillas.* A **report by the Washington Post (https://canvas.harvard.edu/courses/41939/files/6876263/download?wrap=1)** **(https://canvas.harvard.edu/courses/41939/files/6876263/download?wrap=1)** indicated that officials in Washington knew that not only mujahideen commanders but Pakistan's military and ISI (their CIA equivalent) were heavily involved in the drug trade but given the focus on defeating the Soviets, the drug trade could not be curtailed.

After the Soviets were defeated in Afghanistan, Afghanistan descended into civil war with various warlords vying for control. Food production fell by 50-66%, infrastructure was destroyed and transportation became more difficult. A third of the population fled the country between 1978 and 1989. This led to a further rise in opium as a cash crop, which was valued by farmers due to its non-perishable nature and its profitability which was four times that of legal crops. The sale of opium by farmers to the warlords controlling the area allowed the warlords to purchase arms. The flourishing of drug cultivation in war zones, as in Vietnam,

Columbia, Afghanistan and perhaps Mexico, highlights how peasants may have no choice but to grow drugs when stable society crumbles. The opium trade in Afghanistan continued until 2000, when the Taliban effectively eradicated the opium crop **(https://afghanhindsight.wordpress.com/2015/05/23/the-talibans-opium-poppy-ban-in-20002001-lessons-from-history/)**. The eradication was framed as being forbidden by the Koran, although it is thought that the decision was made as an attempt to rehabilitate the image of the regime, lift sanctions and receive government aid. In May 2001 the United States rewarded the Taliban with $43 million in humanitarian aid **(https://www.theguardian.com/world/2001/sep/14/afghanistan.september11)**, in part to assist Afghan farmers who could no longer rely on opium sales. There is some evidence that the Taliban ban on opium was a cynical ploy to increase the value of the Taliban's opium stockpiles **(http://www.cnn.com/2001/US/10/03/inv.drugs.terrorism/index.html)**. Whatever their motivations, the Taliban's plans were put on hold after 9/11 when Operation Enduring Freedom drove the Taliban from power by the end of 2001.

Since 2002 when the United States installed the Karzai regime, opium production in Afghanistan has tripled, and Afghanistan now supplies about 93% of the world's heroin. The reason for this boom in production is complicated and described by Thomas Schweich, former U.S. Coordinator for Counternarcotics and Justice Reform in Afghanistan in his article, **Is Afghanistan a Narco-State? (https://canvas.harvard.edu/courses/41939/files/6876272/download?wrap=1)** **(https://canvas.harvard.edu/courses/41939/files/6876272/download?wrap=1)** His answer is yes, for a variety of complicated reasons including participation in the drug trade by all levels of the Afghan government, the refusal of the Pentagon to get involved in any anti-narcotic efforts, and the refusal by President Karzai to allow aerial spraying of herbicides on poppy crops. The Rolling Stone article, Afghanistan, the Making of a Narco State **(https://www.rollingstone.com/politics/politics-news/afghanistan-the-making-of-a-narco-state-48475/)**, also describes the fact that our natural allies against the Taliban have been the Afghan drug lords, and with the drug economy representing 43% of all agricultural production and 15% of Afghanistan's GDP

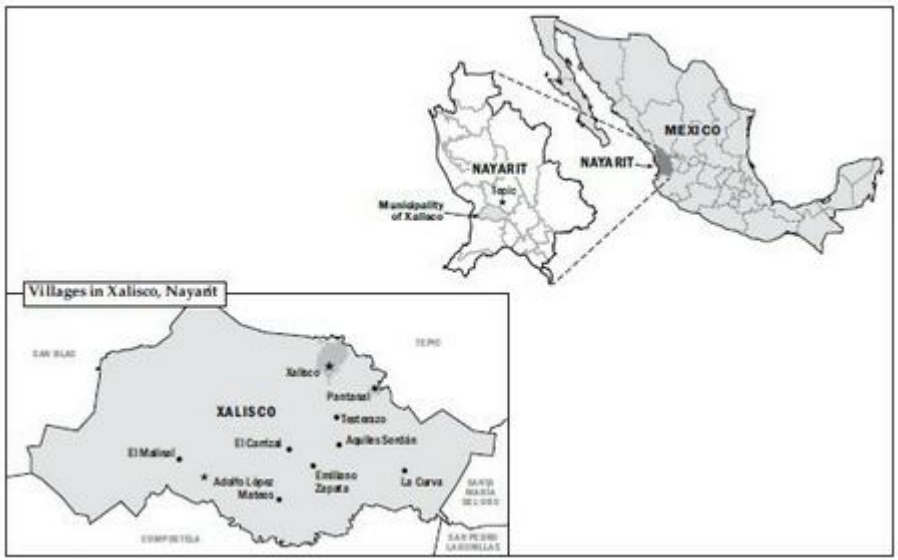
(https://www.csis.org/analysis/afghan-narcotics-2000-2018-control-and-elimination-efforts-drug-economy-and-bombings-labs) , it's too big to get rid of. And it's not just the corrupt Afghan government which is active in the drug trade. A 2009 book, Seeds of Terror: How Heroin is Bankrolling the Taliban and Al Qaeda (https://www.amazon.com/gp/product/0312379277/ref=dbs_a_def_rwt_hsch_vapi_taft_p1_i0) describes the importance of the drug trade for funding the Taliban insurgency and explains why the fighting has been so intense in the main opium growing provinces of Helmand and Kandahar. The fact that the Taliban use the drug economy in areas under their control to fund the insurgency is worrisome, but much more money is made by drug traffickers exporting heroin from Pakistan. Pakistan's ISI was heavily involved in the heroin trade in the 1990's and it is reasonable to assume that it has continued its involvement. As Pakistan's ISI is the main supporter of the Taliban insurgency in Afghanistan, it does make one wonder what the United States strategy is for Afghanistan. One possibility is that we're encouraging the export of heroin to two of Afghanistan's neighbors and one near neighbor: Iran (https://www.bbc.com/news/world-middle-east-40397727) , Pakistan (https://www.unodc.org/documents/pakistan/drug_use_pakistan_Jan_2014.pdf) , and Russia (https://www.dw.com/en/heroin-addiction-threatens-russias-economic-and-demographic-health/a-14996763) , in order to weaken them from within. All three countries have raging heroin epidemics, so if that's the plan, it seems to be working.

Mexican Heroin

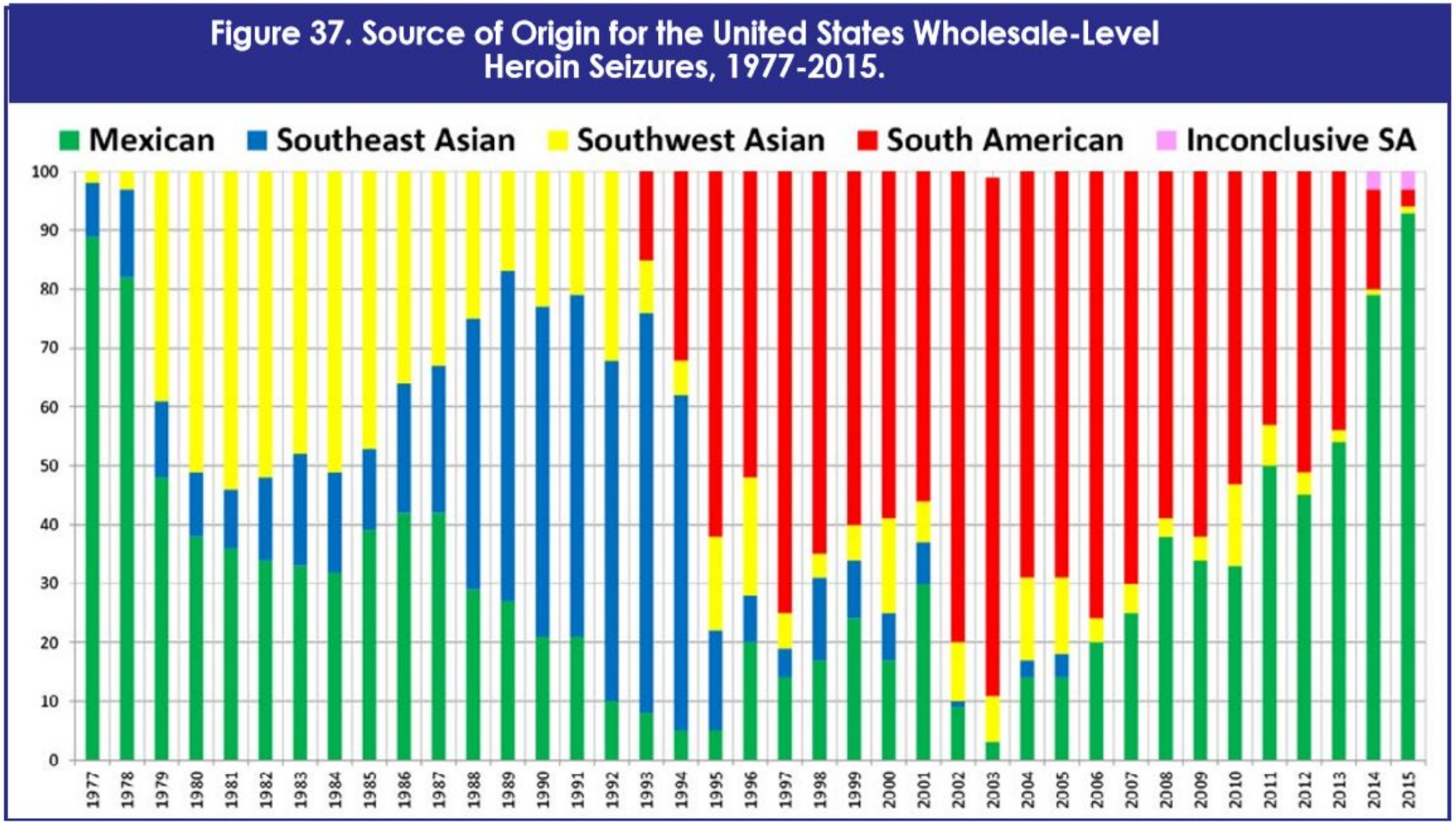
While Afghanistan supplies the rest of the world, almost all of the heroin in the United States now comes from Mexico, and a large amount of Mexican heroin comes from the small farming county of Xalisco, population 49,000, in the Mexican state of Nayarit:

https://en.wikipedia.org/wiki/Nayarit

(https://en.wikipedia.org/wiki/Nayarit)



Villages in Xalisco county, Nayarit, from **Dreamland, The True Tale of America's Opiate Epidemic (https://www.amazon.com/Dreamland-True-Americas-Opiate-Epidemic/dp/1620402521/ref=sr_1_1?ie=UTF8&qid=1542574865&sr=8-1&keywords=dreamland+the+true+tale+of+america+opiate+epidemic)**



Source: DEA

https://www.dea.gov/sites/default/files/2018-07/DIR-040-17_2017-NDTA.pdf

(https://www.dea.gov/sites/default/files/2018-07/DIR-040-17_2017-NDTA.pdf)

The chart above shows how heroin from Colombia displaced heroin from the Golden Triangle and Afghanistan starting in the mid-1990's and then how black tar heroin from Mexico displaced Colombian heroin and came to dominate the U.S. market over the past ten years. The story is told in Sam Quinone's

superb book on the opiate crisis, Dreamland: The True Tale of America's Opiate Epidemic (https://www.amazon.com/Dreamland-True-Americas-Opiate-Epidemic/dp/1620402521/ref=sr_1_1?ie=UTF8&qid=1542483995&sr=8-1&keywords=dreamland+the+true+tale+of+america+opiate+epidemic) . This section borrows heavily from that book.

Black Tar Heroin (https://www.reddit.com/r/opiates/comments/7eve5y/an_ounce_of_some_straight_fire_black_tar_heroin/)

Black tar heroin (https://en.wikipedia.org/wiki/Black_tar_heroin) is made from poppies, but the cookers skip the purification steps that change the crude mixture into a fluffy white power. Black tar is a gooey mass, but potent, consisting of 30-80% heroin, and can be smoked or injected. The Cora Indians

(http://www.gunnisoncounty.org/DocumentCenter/View/944/Cora-Information-Booklet?bidId=) who live in the highlands of Nayarit State are subsistence farmers and grow some opium poppies along with their crops. In the early 1980's a poor farming family named Sanchez in the lowland county of Xalisco got the idea to purchase some opium from the Cora Indians, turn it into heroin and sell it in the United States. The Sanchez family established a small business selling black tar heroin in the San Fernando Valley in California, blending in with the local Mexican population. They would roll the gooey black tar heroin into little balls the size of a BB weighing 0.1 gram each, and put it in a little balloon and sell the balloons to addicts for $15 each. During the 1990's they came up with an innovation; rather than sell out of a house or street corner, they would spread word among the addict population to call a phone number to place an order, like a pizza delivery operation. The phone operator would send a message via pager to a cousin who would drive to the addict's house or a prearranged meeting place like a shopping mall. The driver would keep a supply of heroin balloons in his cheek and swallow them in the unlikely event that he was stopped. A mobile delivery service was difficult for police to detect or surveil. The drivers were young farm workers from Xalisco who longed for a better life than cutting sugar cane and who would work for their uncles for a salary for a few months before returning to their village with cash and Levi 501 jeans to impress their girlfriends.

A family operation, or cell, with a cell head, a dispatcher and five drivers could sell 5 ounces of heroin a day, or 1,750 balloons. At a little less than $10/balloon, they could make $14,000 in revenue per day. Subtract $5,000 for the cost of the heroin and $630 in living and operating costs, they could clear $8,370 per day in profit (https://www.wilsoncenter.org/sites/default/files/Chapter%203-%20Crossing%20the%20Mississippi.pdf). Not bad for a day's work! As a few families in Xalisco started getting rich and building fancy houses, and as young drivers came home with their pockets stuffed with cash, more and more young men started leaving the fields and trying their luck selling heroin in the U.S. In the 1990's the families started diversifying beyond the San Fernando valley. They sent teams of 2 or three people to start up operations in other cities in California, Nevada, Oregon, Colorado, Utah, and even Hawaii. None of the Xalisco boys used drugs; they

were clean cut, hard working young men just trying to get ahead in the world. There were a few rules: never carry weapons or pick a fight, avoid large cities with strong underworld heroin rings and don't drive flashy cars or wear flashy clothes. If a driver ever got arrested, he would serve a small jail sentence and get deported home. When opening up a new city, all they had to do was to hang out around the methadone clinic and hand out free samples along with their phone number. The only person who had to speak English was the dispatcher; the drivers got along well with sign language. The cell heads focused on customer service; dispatchers would often call the customers back to make sure the driver had treated them well and not short changed them. Customers would get extra product for ordering larger amounts or referring their friends. One addict, having been released from a several month jail sentence, was given a gift of free product just to get her addiction starting again.

Prior to the invention of the Xalisco pizza delivery model of heroin distribution, drug cartels were large hierarchical organizations. If law enforcement could arrest someone in the middle of the hierarchy, they might get him to confess and implicate others, and potentially take out a large portion of the organization. The beauty of the Xalisco model was there was no head, and no large organization, just a collection of entrepreneurial families. Just as the internet was designed by the Defense Advanced Projects Research Agency as a network that could survive a nuclear attack, the Xalisco model was a distributed organization and very hard for law enforcement to prosecute. Even after police finally understood the mechanics of the operations in the 1990's, it took hours of telephone and ground surveillance for a very small heroin bust. Another benefit of the distributed entrepreneurial Xalisco model is that there is no dilution of product as it moves through the distribution chain. With conventional white fluffy heroin, there is a profit motive to step on, or dilute the product with an innocuous substance like lactose, as it gets passed from each larger distributor to a smaller distributor. In the Xalisco model, most of the workers are salaried and don't profit from diluting the drug. Thus, when it hit the streets at 50% purity, it was often the strongest heroin the addicts had experienced, and quickly built a following among the addicts in a small city.

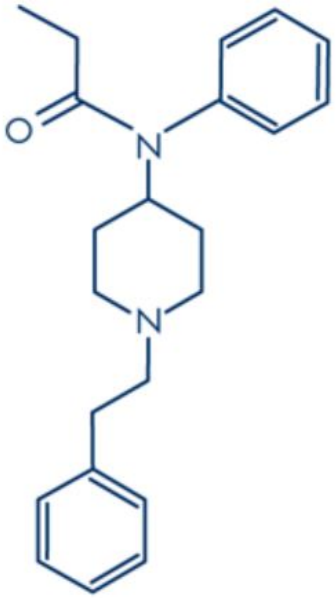
Starting in the late 1990's another factor gave a huge boost to the Xalisco boys. A boom in opiate addiction fueled by Oxycontin hit the Midwest and Appalachia, following the wave of economic despair as industry moved blue collar jobs to Mexico and China. As we saw in the last session, Oxycontin developed its own economy, with Medicaid fraud and pill mills generating an Oxycontin currency with a value of $1/milligram. Addicts stole and shoplifted to purchase 30 milligram Oxycontin for $30. When the Xalisco cells finally crossed the Mississippi into America's former industrial heartland, they were able to offer black tar heroin at a price of $15 or less for 100 milligrams, or $0.15/milligram, which was one sixth of the price of Oxycontin. There was a huge demand for the product and the Xalisco style cells quickly expanded into places like Columbus Ohio, Carnegie Pennsylvania, Charlotte North Carolina, and Nashville Tennessee. All these places had enclaves of Mexican immigrants so it was easy for the Xalisco boys to fit in. They avoided markets like Florida, New York City, or Philadelphia to avoid conflict with major criminal organizations. "They went," as one cop told Sam Quinones, "and took over the Oxycontin belt."

In June 2000,after months of physical and phone surveillance the DEA and the FBI executed search warrants in 20 cities and arrested over 200 Xalisco boys in a raid called Operation Tar Pit **(http://www.cnn.com/2000/US/06/15/heroin.bust/index.html)**. It was the largest case, both geographically and by manpower that the FBI and DEA had ever jointly undertaken. "This morning we successfully wiped out this entire national heroin-trafficking organization," said Drug Enforcement Administration administrator Donnie Marshall **(http://www.cnn.com/2000/US/06/15/heroin.bust/link.donnie.marshall.jpg)**. "We dismantled them from top to bottom, from their smuggling operation, to their wholesale distribution sales and all the way down to their street level dealers in many American neighborhoods," he said. Unfortunately Operation Tar Pit was only a slight interruption to the Xalisco operation. Xalisco county may be just a tiny farming area with a population of only 49,000, but for every person arrested, there were dozens more at home ready to

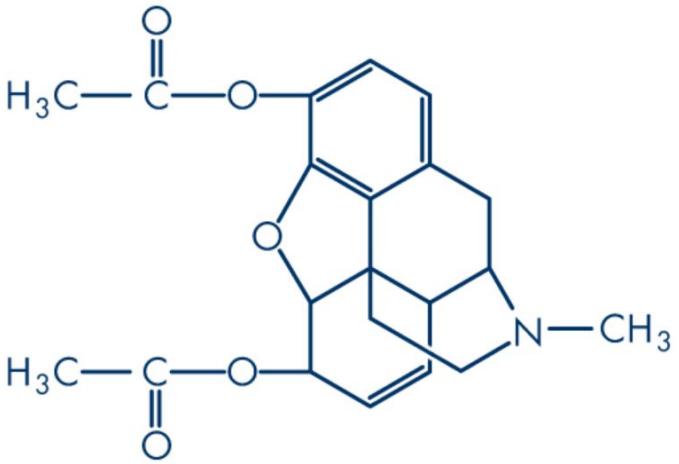
take their place. By 2000, no one in Xalisco wanted to work the sugar cane fields anymore; the entire county knew their future was selling heroin. Mexican black tar distribution continued unabated.

In 2010 the war between the Zetas and the Sinaloa cartel spread south and engulfed Xalisco, Nayarit. Dozens of people were killed in the violence which lasted a year. Eventually the Zetas took control and now are paid a tax by the Xalisco entrepreneurs. The Mexican cartels have greatly expanded their operations and have introduced a flood of heroin into major cities in the U.S.; these organized distribution networks are impinging on the Xalisco entrepreneurs. As opiate prescription reform takes hold in the U.S. more and more addicts who have been using legal or illegal pills are being forced to switch to heroin, so perhaps the size of the market is outgrowing the small entrepreneurs of Xalisco and is more appropriate for the cartels. Having spread the curse of heroin throughout small town America, the Xalisco boys have done enough damage; maybe they can now go back to sugar cane farming.

Fentanyl and Other Synthetics



Molecular formula: $C_{22}H_{28N2}O$
Molecular weight: 336.471 g/mol



Molecular formula: $C_{21}H_{23}NO_5$
Molecular weight: 369.4 g/mol

Fentanyl Heroin

http://www.emcdda.europa.eu/publications/drug-profiles/fentanyl **(http://www.emcdda.europa.eu/publications/drug-profiles/fentanyl)**

http://www.emcdda.europa.eu/publications/drug-profiles/heroin **(http://www.emcdda.europa.eu/publications/drug-profiles/heroin)**

The chemical structures of Fentanyl and heroin are shown above. As you can see they look nothing alike. Heroin is derived from morphine which is made by the poppy plant. In the past, all opiates, such as morphine, codeine, oxycodone, etc were derived from similar chemicals produced by the poppy plant. Fentanyl, and related compounds like carfentanyl, are made synthetically in the laboratory or chemical

factory from chemicals completely independent of the poppy plant. This represents a major step forward in the opiate seeking evolution of our species; no longer do we need to rely on farmers cultivating the poppy, instead we are free to cook up opioids from easily sourced chemical precursors. We no longer have to worry about weather, defoliant crop eradication programs, or dangerous smuggling operations. Any college educated chemist can synthesize some fentanyl in a chemistry lab. The synthesis is quite easy, consisting of just four steps. The recipe was published recently in a scientific paper An Efficient, Optimized Synthesis of Fentanyl and Related Analogs **(https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0108250)** .

The history of fentanyl is outlined in this paper **(https://www.jpsmjournal.com/article/S0885-3924(05)00035-7/fulltext)** from the Journal of Pain and Symptom Management. Fentanyl was first synthesized in the early 1960's by Dr. Paul Janssen, founder of Janssen Pharmaceutica, and the largest shareholder at the time of Johnson & Johnson. It was found to be very potent, 50 to 100 times more potent than morphine, very fast acting, with a relatively short duration. While fentanyl and morphine have similar half lives (3-7 hours for fentanyl vs 2-4 hours for morphine **(https://www.medscape.org/viewarticle/518441_2)**) and receptor binding constants (1.9 and 2.0 respectively), the primary difference is that fentanyl is very lipid soluble and morphine isn't, thus fentanyl quickly crosses the blood brain barrier, while morphine is slow to cross in and out. Dr. Janssen searched for years for a use for this molecule and by the 1980's fentanyl plus oxygen became the standard for anesthesia in open heart surgery. In 1990 a fentanyl skin patch, Duragesic, was approved for chronic pain in opioid tolerant patients, and sales quickly grew to $1.7 billion by 2003.

Fentanyl Analogs

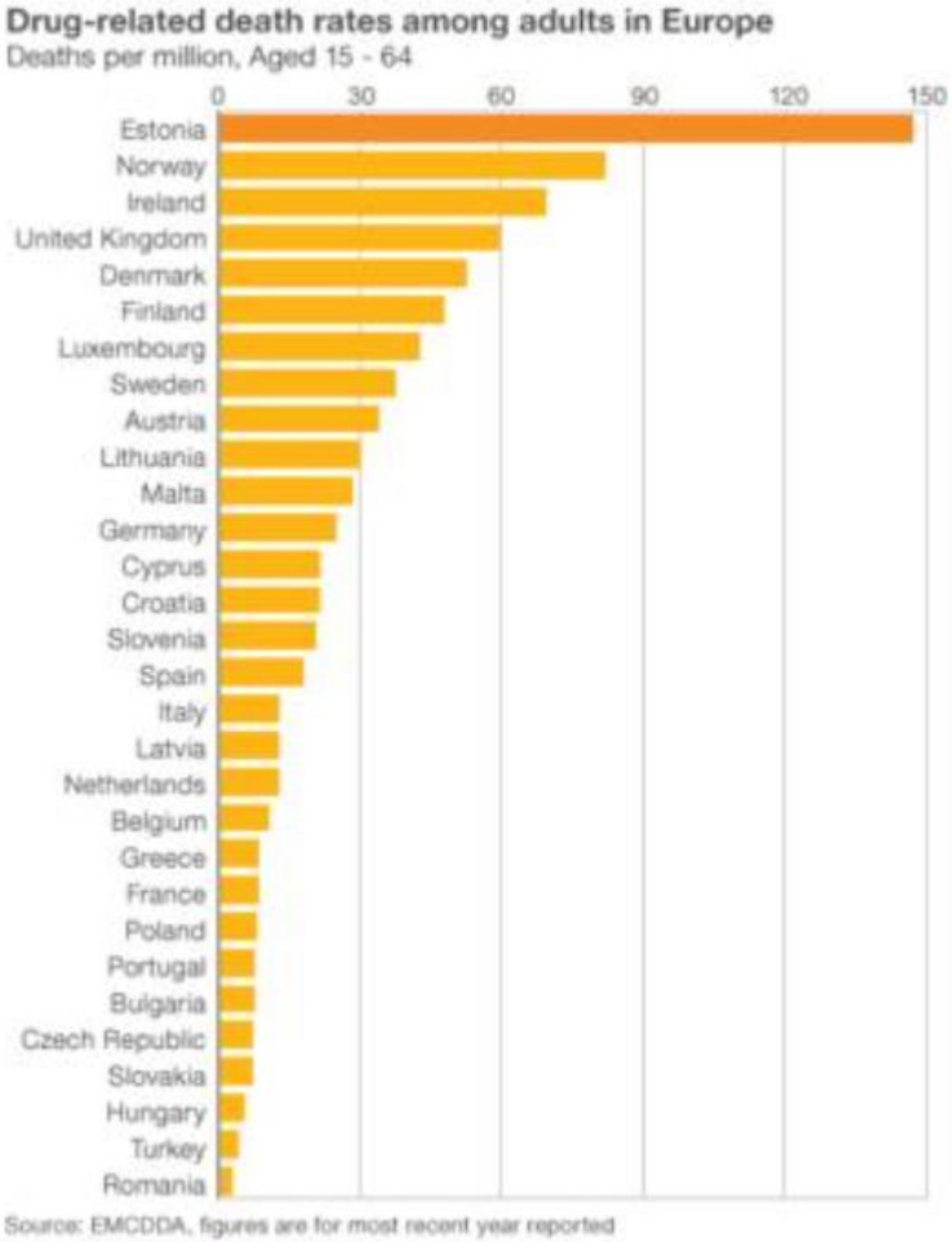
Since fentanyl is made by chemists, they can easily make similar chemicals with small changes to the chemical structure. These are known as analogs. There are over 1,400 known analogs to fentanyl and over

one hundred of these have been tested on animals or otherwise characterized. The most potent synthetic opioid known is carfentanyl (https://en.wikipedia.org/wiki/Carfentanil), which is 10,000 times more potent than morphine, and legally used only for large animal veterinary purposes. Wikipedia has a list of 69 fentanyl analogs (https://en.wikipedia.org/wiki/List_of_fentanyl_analogues) with their structure. Alpha methylfentanyl (https://en.wikipedia.org/wiki/%CE%91-Methylfentanyl) was designed to resist metabolism, so it has a longer half life in the body. Black market chemists can choose what to make based on not only potency or half life, but ease of manufacture or ability to evade law enforcement detection. Today the "fentanyl" in a black market drug is likely to be a complex mixture of fentanyl analogs. Tom Petty died from a mixture of drugs including fentanyl, acetyl fentanyl and despropionyl fentanyl. Fentanyl analogs are of great interest to recreational users and black market chemists; here is a discussion forum (https://drugs-forum.com/forums/opioid-rcs.517/) about them.

Black Market Fentanyls

In the late 1980's, shortly after fentanyl was approved by the FDA, a high school educated drug chemist from Wichita, Kansas (http://interactive.fusion.net/death-by-fentanyl/the-walter-white-of-wichita.html) named George Marquardt started synthesizing fentanyl and selling it to heroin dealers to increase their profits. Since fentanyl is so potent, and easy to make from cheap chemical precursors, it is much cheaper than heroin, which has to be grown from poppies and smuggled into the U.S. Marquardt's fentanyl was very popular with Chicago drug dealers and their customers, over 100 of which died of fentanyl overdoses in the early 1990's. Marquardt was caught and sent to prison for 20 years in 1993, temporarily ending the fentanyl overdose crisis.

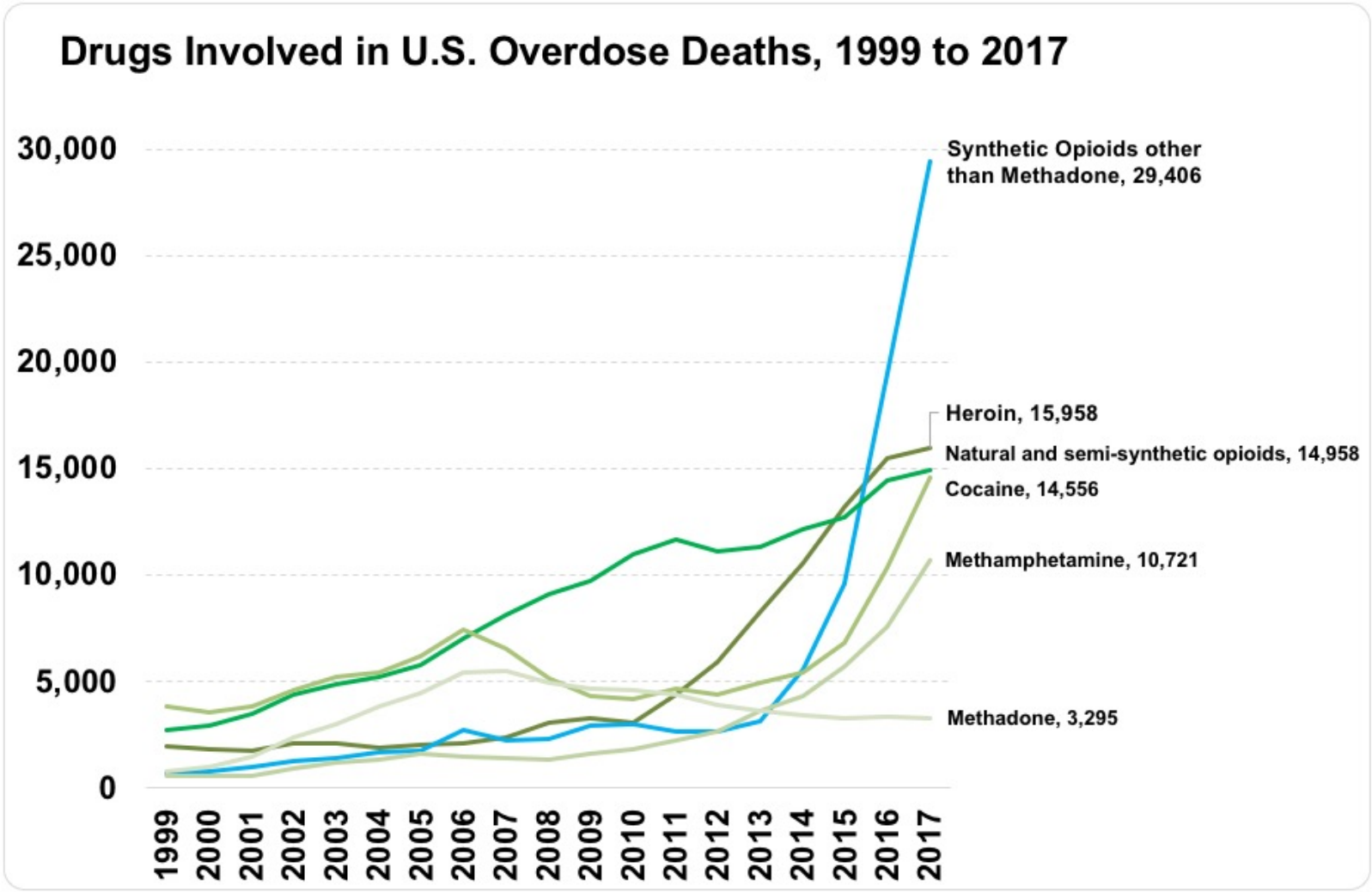
In 2001, when the Taliban outlawed opium in Afghanistan, there was a short term heroin shortage in Russia and Europe. Enterprising Russian chemists quickly synthesized 3-metylfentanyl (https://en.wikipedia.org/wiki/3-Methylfentanyl) which is between 400 and 6,000 times stronger than morphine. Drug traffickers brought the drug to Estonia where, instead of being cut with heroin, it replaced the heroin market and led to an epidemic of overdose deaths (https://www.theglobeandmail.com/news/national/estonias-cautionary-fentanyl-tale-for-canada/article30512811/). Because fentanyls are so potent, it can be difficult for drug dealers to dilute the drug to the proper dosage; this is one reason fentanyl overdoses are so common. An opiate naive user can die from an overdose of just 3 milligrams of fentanyl; that is the weight of 5 grains of sugar. The other reason is that because fentanyl is so potent, addicts can quickly build up tolerance and end up taking huge doses, which again, can be fatal if the dose is miscalibrated. After the heroin shortage abated later in 2001, most of the rest of the world went back to heroin but the drug dealers in Estonia continued to sell only 3-methylfentanyl, perhaps because it is so much easier to smuggle than heroin. For many years now (http://www.emcdda.europa.eu/media-library/infographic-drug-induced-mortality-rates-among-adults-15%E2%80%9364-selected-trends-and-most-recent-data_en), Estonia has had the dubious distinction of the highest overdose death rate in Europe:



[Synthetic drug fentanyl causes overdose](#)

[boom in Estonia](#) **(https://www.bbc.com/news/world-europe-17524945)**

Estonia may be a harbinger for the rest of the world. Death rates from drug combinations which include fentanyl were low until 2013, when they suddenly shot up to become the leading cause of overdose death in the United States:



https://www.drugabuse.gov/related-topics/trends-statistics/overdose-death-rates

(https://www.drugabuse.gov/related-topics/trends-statistics/overdose-death-rates)

Because fentanyls are so cheap and potent, they are being mixed into not only heroin, but other drugs like cocaine and methamphetamine to give them an extra kick; this has led to a sharp rise in cocaine and meth related overdose deaths **(https://www.buzzfeednews.com/article/scottpham/cocaine-fentanyl-opioid-overdoses)** .

Fentanyl Trade Routes

The easiest way for an addict to obtain fentanyl is on the internet. The open internet has many Chinese companies willing to sell to American buyers. See: http://www.tradett.com/fentanyl-products/ **(http://www.tradett.com/fentanyl-products/)**

You can purchase a wide variety of drugs in a variety of forms: powders, patches, and even counterfeit Oxycontin's that really contain fentanyl. Who smuggles it from China to the United States? No one. The United States Postal Service **(https://www.statnews.com/2018/01/24/china-fentanyl-usps/)** is one of the largest drug distributors in the world, and will deliver right to your door. With 498 million international packages delivered by USPS in 2017, there's no way it can inspect enough packages to stop the flow. The Synthetics Trafficking and Overdose Prevention Act of 2018 **(https://waysandmeansforms.house.gov/uploadedfiles/stop_act_one_pager.pdf)** was passed in the House this year **(https://www.congress.gov/bill/115th-congress/house-bill/5788)** and is waiting for a Senate vote. This will require advanced electronic data to be sent ahead when an overseas company ships to the USPS, and if Customs and Border Patrol know the sender is suspect they can stop the shipment at the border. Opinions are mixed **(https://www.bbc.com/news/world-us-canada-43146286)** on whether this will make a dent in the flow. While U.S. government officials can go on the internet themselves and find shippers of illicit drugs, much of the illicit internet drug trade is done on the dark net. These are web sites that aren't

reachable through Google; you have to have a trusted friend recommend that you join. If you want to buy drugs on the dark net, here's a how to guide (https://www.deepdotweb.com/2015/12/30/buy-drugs-online-from-darknetmarkets/). Here's a description of the "Amazon of drug cartels" (https://www.theguardian.com/society/2013/oct/06/dark-net-drugs). The web sites are encrypted and transactions on the dark net are made through bitcoin, so the financial flow cannot be traced. The first dark net site, Silk Road (https://en.wikipedia.org/wiki/Silk_Road_(marketplace)), was thought to have facilitated a million drug transactions between 2011 and 2013. An analysis of dark net drug sales by the United Nations Office on Drugs and Crime (https://www.unodc.org/wdr2018/prelaunch/WDR18_Booklet_2_GLOBAL.pdf) (starts on page 33) cites a RAND study that estimates annual dark net drug sales of $170 million to $300 million per year, which is only 0.1-0.2% of global illicit drug sales. The dark net is a wonderful convenience for middle class suburban addicts, but it is primarily retail oriented.

The wholesale fentanyl trade consists primarily of the sale of fentanyl and its chemical precursors by Chinese suppliers to Mexican drug cartels which have the ability to synthesize various fentanyls and import and distribute them in the United States. This flow is outlined in a report by the intelligence firm Stratfor, entitled The Chinese Connection to the Flood of Mexican Fentanyl (https://worldview.stratfor.com/article/chinese-connection-flood-mexican-fentanyl). Shipments of fentanyl to the United States are skyrocketing. This May, police in Nebraska seized 118 pounds of fentanyl in a traffic stop (https://www.foxnews.com/us/seized-fentanyl-enough-to-kill-26m-people-nebraska-police-say), enough to kill 26 million people. Huge seizures such as this are increasing. In March, a member of the Sinaloa cartel was indicted in New York for conspiring to import 44 pounds of fentanyl to New York City (https://www.washingtonpost.com/news/post-nation/wp/2018/03/27/suspected-drug-kingpin-charged-with-trafficking-enough-fentanyl-to-kill-10-million-people/?utm_term=.9e1c3d5f866e). New York City is a major

distribution hub, as described in the article The Drug Dealers Next Door: How NYC Heroin Mills Are Blending In **(https://www.cbsnews.com/news/the-drug-dealers-next-door-how-nyc-heroin-mills-are-blending-in/)** . What's interesting about these two articles is the prices they mention: the fentanyl was being sold for $50,000 per kilogram while heroin was being sold wholesale for $60,000 per kilogram. Since fentanyl is around 50 times stronger than heroin, the economics are extremely compelling for drug substitution. That is why the fentanyl overdose death rate is skyrocketing and has surpassed all other drugs. Interestingly, the low cost of fentanyl is starting to put pressure on heroin prices to the point where some Mexican poppy farmers are getting out of the opium trade **(https://nypost.com/2018/06/22/mexican-heroin-cannot-escape-the-law-of-supply-and-demand/)** because it doesn't cover their costs. We may be at the point where opioids have been freed from the tether of nature. With synthetic fentanyls so cheap and potent that they can be smuggled in anything, there may be no more need for the poppy plant. We are facing an unstoppable tsunami of low cost opioid supply. God help us.

Preparation

Please consider the following questions:

1) What do you think our actual strategy is in the war in Afghanistan?

2) Do you agree with U.S. government officials that we should ignore illicit drugs when national security concerns are at stake?

3) Who is to blame for the American heroin epidemic: Cora Indians, entrepreneurial Xalisco farm boys, addicted Americans, others?

4) Do you think the rest of the world will follow Estonia into a high rate of fentanyl overdose deaths? Why or why not?

5) Why doesn't the American government pressure the Chinese government to crack down on fentanyl and fentanyl precursor manufacturers?

6) What will happen when cheap fentanyl is ubiquitous? How can we stop it?

Additional Resources

List resources