

After the Grand Fracture: Scenarios for the Collapse of the International Drug Control Regime

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EXECUTIVE SUMMARY

Key Findings

- Decriminalizing the possession of amounts of marijuana suitable for personal use has minimal repercussions beyond a nation's borders. But even one country's legalization of a commercial cocaine or heroin industry would affect global markets.
- International prohibitions against cocaine and heroin create asymmetries. Production and transshipment concentrate in relatively few places that bear the bulk of the negative externalities created by the illegal production and international trade.
- The impact of negative externalities has led to calls for altering the United Nations treaty framework and for individual nations to legalize outside of the existing framework.
- Legalization of production in one country would attract productive activities (with their associated externalities) from the remaining illicit producers. This incentivizes current producing countries to encourage others to take the first step.
- Legalization of transshipment in one country would attract transportation activities from existing jurisdictions where drugs remain illegal since it would reduce the need for traffickers to assume the risk of covert shipments or armed guards.
- The impact of legalized transshipment of cocaine is different for the United States and for other regions of the world. As the United States shares a large porous border with Mexico, current covert smuggling networks would continue to operate. Transshipment to Europe and Asia would take place through regular trade routes, principally containers, given the distances involved.
- If a European or Asian state with large porous land borders were to legalize transshipment, it would attract the bulk of cocaine transported to their region, producing covert smuggling networks similar to those currently existing on the U.S.-Mexico border.

Policy Recommendations

- Efforts to improve global drug policy at the 2016 Special Session of the United Nations General Assembly on the World Drug Problem should model the dynamic impact of moves toward decriminalization or legalization of illicit drugs such as heroin and cocaine. Such moves will have consequences on nations where production, transshipment, and consumption remain illegal.

Introduction

This paper is wrong.¹ I hope it is nonetheless useful.

This paper must be wrong because it tries to make long-term predictions concerning an unprecedented trajectory in a highly uncertain environment characterized by strategic interactions between multiple asymmetric nation states. Philip Tetlock and common sense warn about the frailty of such predictions.²

The topic is the potentially imminent breakdown of the twentieth century international drug control regime. A breakdown is not guaranteed but it is clearly possible if not probable, and so it behooves interested parties to consider how events might play out. The general topic has drawn attention, but most extant literature dwells on weaknesses of the old regime or the practicalities of how a country could defect from that regime.³ What I attempt here is to prompt discussion of the strategic or game-theoretic dimensions, considering who wins and who loses under various scenarios of which country moves first and which others, if any, then follow suit.

The topic is complex, so the argumentation here is highly simplified or, to use a more polite term, highly stylized. Schelling is, as always, an inspiration even if an unattainable ideal.⁴ I focus on the possibility of one or more Latin American nations legalizing a cocaine industry. For clarity of exposition I refer to particular countries legalizing production and distribution, but point out when they are merely representative exemplars within a larger set. For example, when I speak of Honduras, it should be understood that the analysis would look substantially similar for Guatemala.

The first half of the paper covers a range of preliminaries. It sets forth basic facts about prohibition (e.g., drugs are compact, prohibition keeps prices high), the parameters of the strategic “game” being considered (i.e., legalizing a commercial cocaine industry), and who the players are. The second half of the paper considers two scenarios: (1) a source country legalizing; and (2) a transshipment country legalizing. This includes a discussion of how other countries might respond, and (briefly) some thought as to how an anticipated response might influence various players’ opening moves.

Conventional Analysis of Legalization vs. Prohibition

The use and abuse of dependence-inducing intoxicants can create enormous harms, raising the question of whether their production and distribution should be legal or prohibited. That choice has been thoroughly discussed in the literature from the perspective of a single nation, walled off from the rest of the world.⁵ The default position in modern economies is for goods and services to be legal, subject only to various taxes, rules, and regulations. However, exceptions are routinely made if production and/or consumption generate significant harms to innocent third parties; various countries’ bans on private gun ownership are an example. Likewise, certain markets are banned on moral grounds. The United States bans the slaughter and sale of horse meat and the buying and selling of human organs. Many countries ban contracts for surrogate pregnancy; some ban the sale of Nazi memorabilia. (The U.S. bans neither.)

Moral arguments figure into bans of psychoactive drugs (more explicitly in the past than present) and

¹ Maria Cuellar, Beau Kilmer, Mark Kleiman, and Peter Reuter made many helpful suggestions on earlier drafts of this paper.

² Philip Tetlock, *Expert Political Judgment: How Good Is It? How Can We Know?* (Princeton, NJ: Princeton University Press, 2005). Tetlock examines why experts are often wrong in their forecasts, exploring what “good” judgment in policy and prediction actually means.

³ Robin Room, “Reform by Subtraction: The Path of Denunciation of International Drug Treaties and Reaccession with Reservations,” *International Journal of Drug Policy* 23, no. 5 (2012): 401-406, doi: [10.1016/j.drugpo.2012.04.00](https://doi.org/10.1016/j.drugpo.2012.04.00); Robin Room and Peter H. Reuter, “How Well Do International Drug Conventions Protect Public Health?” *The Lancet* 379, no. 9810 (2012): 84-91, doi: [10.1016/S0140-6736\(11\)61423-2](https://doi.org/10.1016/S0140-6736(11)61423-2); David Bewley-Taylor and Martin Jelsma, “Regime Change: Re-visiting the 1961 Single Convention on Narcotic Drugs,” *International Journal of Drug Policy* 23, no. 1 (2012): 72-81, doi: [10.1016/j.drugpo.2011.08.003](https://doi.org/10.1016/j.drugpo.2011.08.003); and David Bewley-Taylor, “Towards Revision of the UN Drug Control Conventions: Harnessing Like-mindedness,” *International Journal of Drug Policy* 24, no. 1 (2013): 60-8, doi: [10.1016/j.drugpo.2012.09.001](https://doi.org/10.1016/j.drugpo.2012.09.001).

⁴ Thomas Schelling, *Micro-motives and Macro Behavior* (New York: WW Norton and Company, 1978).

⁵ See, for example, Mark Kleiman, *Against Excess: Drug Policy for Results* (New York: Basic Books, 1992).

drugs create externalities (e.g., impaired driving). However, the peculiar concern with dependence-inducing drugs is harms that fall closer to home, on family and on the users themselves. Mainstream economists usually assume rational consumers factor in those harms, so decisions to consume are proof that consumption's benefits exceed all costs even when generalized to include intern-alities (harms suffered by the user) and intimate-alities (harms borne by children, spouses, and other family members).⁶ Public health advocates and social conservatives, however, are less impressed with individuals' decision making capacity and are consequently more willing to embrace paternalistic interventions.⁷ The particulars play out differently depending on the substance, but these broad outlines of intra-national legalization arguments are familiar and require no further elaboration.

However, we live in an interconnected world, and one country's drug policy can spill over to affect other countries. All of the major illicit drugs that cause the greatest harms to users—heroin, cocaine (including crack), and amphetamine-type stimulants, even bootleg cigarettes—are predominantly articles of international commerce, with the production of cocaine and opiates in particular geographically concentrated. The conspicuous partial exception is cannabis. As recently as 2000, most marijuana used in the United States was grown in Mexico and most cannabis used in Europe came from Morocco,⁸ however, domestic production has grown very rapidly.

Problems with the Status Quo

Legalization of cocaine and heroin has minimal popular support in final market countries, even in the United States where four states have legalized cannabis and

others seem poised to follow.⁹ Certainly final market countries suffer from crime, corruption, incarceration, and deaths associated with cocaine and heroin, but rates of use and dependence are far, far below those of legal intoxicants, and the problems with black markets do not rise to the level of existential threats to final market nation states.

The greater dissatisfaction with cocaine prohibition comes from South and Central American countries that suffer the ill effects of black market production and distribution of drugs destined for foreign markets. Contrary to pro-reform advocates' claims, prohibition drives prices up and therefore drives consumption down substantially in final market countries. However, prices are lower and availability higher in producer and transshipment countries than in final market countries, so they do not realize the full benefits of prohibition in terms of reduced abuse and dependence. Yet the power and profits of producer and transshipment countries' criminal organizations grow to an international scale, since they are supplying a global rather than a merely local market. Various countries including Colombia and Mexico have suffered catastrophic levels of drug-related violence, and some smaller countries face a real risk of collapsing into failed narco-states since the international traffickers can become richer and more powerful than the government in a small country such as Honduras or Guatemala.

Fingers can be pointed in either direction. Final market countries blame source and transshipment countries for supplying the drugs; source and transshipment countries counter by noting that the United States and Europe have at least until recently accounted for perhaps two-thirds of cocaine demand.¹⁰ There

⁶ The status of this last group of stakeholders is somewhat ambiguous as to whether they are internal or external to the drug users' decision processes.

⁷ Libertarians eschew either calculus and object in principle to protecting adults from their own actions.

⁸ Ted Leggett, "A Review of the World Cannabis Situation," *Bulletin on Narcotics* 58 no. 1-2 (2006), http://www.unodc.org/documents/data-and-analysis/bulletin/2006/A_review_of_the_world_cannabis_situation.pdf.

⁹ Washington, D.C. has also legalized personal possession, use, and small-scale growing, but that is qualitatively different from allowing a commercial market.

¹⁰ The imbalance was even greater in the past, but U.S. cocaine consumption has fallen sharply and consumption in South and Central America has grown. Jonathan P. Caulkins, et al., "Cocaine's Fall and Marijuana's Rise: Questions and Insights Based on New Estimates of Consumption and Expenditures in U.S. Drug Markets," *Addiction* 110, no. 5 (2015): 728-36, doi: [10.1111/add.12628](https://doi.org/10.1111/add.12628); and United Nations Office of Drugs and Crime (UNODC), *World Drug Report 2014* (Vienna, United Nations, 2014), http://www.unodc.org/documents/wdr2014/World_Drug_Report_2014_web.pdf.

is some commonality of interest, however. Everyone is better off if final market countries implement prevention and treatment programs that reduce demand. Everyone is better off if source countries take steps to destroy or diffuse the political power of narco-trafficker groups. On the whole, though, the interests of producer and consumer countries diverge.¹¹

To date, the main response to this imbalance has been for rich, final market countries to provide various forms of aid to Southern supply and transshipment countries, including direct assistance with enforcement and development aid more generally. Southern countries can try to extort greater aid by some combination of: (1) humanistic appeals that stress the extent of their suffering and the “root cause” being Northern demand; (2) playing hardball in negotiating international enforcement cooperation agreements; (3) highlighting that their collapse into a failed narco-state would also hurt the North; and (4) threatening to defect from the international control regime by legalizing cocaine. One goal of this paper is to assess the viability and rationality of this last threat through trying to envision how it would play out.

Two Crucial Facts About Shipping Drugs Internationally

Compactness

The fundamental problem with thwarting the distribution of psychoactive drugs is that they are easy to produce with very limited area, and even easier to ship around the world because they are so compact. That means that if drugs are commercially available in one country, it is very hard to prevent them from being readily available in another country.

To give a sense of perspective, a heavy user generally consumes 100-750 pure milligrams of heroin, cocaine, or tetrahydrocannabinol (THC), the intoxicating ingredient of marijuana, per day. Potency or purity is typically in the range of 15-60 percent, so the bulk weight is very roughly one gram per day. On an annual basis that is only about one third of a kilogram or four-fifths of a pound (13 ounces) per heavy user. Table 1 compares that weight to everyday consumer items that are routinely shipped great distances.

TABLE 1: WEIGHT OF DRUGS COMPARED TO CONSUMER GOODS ROUTINELY SHIPPED GREAT DISTANCES

Item	Weight
iPhone 5	4 ounces
Year's supply of drugs, pure	6 ounces
Dress shirt	8 ounces
Carton of cigarettes	10 ounces
Year's supply of drugs, raw weight	13 ounces
Paperback novel	10-15 ounces
Hardcover book	25 ounces
Bottle of wine	45 ounces
Average school textbook	60 ounces

One can also look at things from the perspective of a shipper. A standard 40-foot container of the sort drawn by tractor-trailer rigs has a capacity of 58,500 pounds, the equivalent of one year's supply for 75,000 heavy users consuming one gram per day.¹² Shipping such a container laden with legal goods across the ocean costs a few thousand dollars; trucking it across the United States costs a few hundred dollars. Hence, the physical transport costs to ship drugs around the world in bulk would—if they were legal—fall to pennies per person for a year's supply. Even premium

¹¹ Daniel Mejía and Pascual Restrepo, “Why is Strict Prohibition Collapsing?: A Perspective from Producer and Transit Countries,” in *Ending the Drug Wars*, LSE IDEAS Special Report, ed. John Collins, 26-32 (London: The London School of Economics, 2014), <http://www.lse.ac.uk/IDEAS/publications/reports/pdf/LSE-IDEAS-DRUGS-REPORT-FINAL-WEB.pdf>. LSE IDEAS Special Report.

¹² Cocaine hydrochloride has a density of 1.2 grams per cubic centimeter, so it would take 179,000 pounds of cocaine powder to fill a 67.5 cubic meter container. Thus weight would seem to be the limiting factor for cocaine, whereas for marijuana it would be volume. See B.J. Micklich and C.L. Fink, “Narcotics Detection Using Fast-neutron Interrogation” (paper presented at the ONDCP International Technology Symposium, Nashua, NH, October 1995), <http://www.osti.gov/scitech/biblio/204024>.

delivery service is affordable. International package delivery services such as FedEx can deliver overnight a one pound package of a legal good to essentially any address on the planet for \$40-\$100, or roughly 10-25 cents per day's supply of drugs.

Legalization would also drive down production costs. All of the THC consumed in the United States could be farmed on about ten thousand acres, roughly ten modestly-sized modern farms.¹³ Likewise, Tasmanian farmers who grow poppies legally to supply the pharmaceutical opioids industry employ modern industrial farming methods that are vastly more efficient than the labor intensive hand-cultivation methods used in Afghanistan, where such production is illegal.¹⁴

The Non-inevitability of Violent Trafficking

It is important to distinguish between two broad strategies for moving illegal drugs from one country to another. The first has staff from the criminal organization accompany the drugs and penetrate the border *between* official ports of entry, not through them. Regardless of whether the vehicle employed is a general aviation aircraft, semi-submersible, or all-terrain vehicle, those personnel are likely to be armed to the teeth to defend against robbery and other threats to the cargo. The “soldiers” of the trafficking organizations have no special skills other than a willingness and a capacity to exercise lethal violence.

The second is to secrete contraband within general merchandise that is shipped via conventional, legal cargo transporters through an official port of entry; for example, a front company fills a shipping container with furniture whose legs have been hollowed

out, forming secret compartments within which the drugs are hidden. No soldiers accompany the drugs. Smuggling is accomplished via finesse, rather than brute force. Smuggling organizations still need a staff, but they require people skilled at woodworking and setting up front companies, not brutality.¹⁵

A crucial point is that the first kind of trafficking imposes far greater negative externalities than the second. The second type of activity is clearly illegal and certainly could involve corruption, violence, and intimidation (particularly at the point of embarkation), but compared to the first it is more akin to white collar crime or providing offshore banking services to enable the evasion of taxes, than to thuggery.

A second key point is that distance matters for the first kind of smuggling but not for the second. The range of general aviation aircraft and semi-submersibles is measured in hundreds not thousands of miles. But cargo vessels carry shipping containers across vast stretches of ocean at minimal cost. Cargo planes can fly 7,500 miles non-stop, and landing to refuel is not necessarily a problem; the plane's cargo is not unloaded and inspected if it is proceeding on to another final destination.

Contemplating the Scope of Change: What Kind of Legalization Is an International Concern?

International drug control agreements make sense because laws in one country can affect drug price, availability, and use in another country. To use a familiar example, when the Netherlands (de facto) legalized retail cannabis sales, it attracted drug tourism from neighboring countries, including from countries that

¹³ Jonathan P. Caulkins et al., *Marijuana Legalization: What Everyone Needs to Know* (New York: Oxford University Press, 2012); and Jonathan P. Caulkins et al., *Considering Marijuana Legalization: Insights for Vermont and Other Jurisdictions*, RAND Corporation Research Reports RR-864 (Santa Monica, CA: RAND Corporation, 2015), http://www.rand.org/pubs/research_reports/RR864.html.

¹⁴ A. J. Fist, “The Tasmanian Poppy Industry: A Case Study of the Application of Science and Technology” (paper presented at the opening session of the 10th Australian Agronomy Conference, “Science and Technology: Delivering Results for Agriculture?” eds. Barry Rowe, Danny Donaghy and Neville Mendham, Hobart, Tasmania, January 2001), <http://www.regional.org.au/au/asa/2001/plenary/1/fist.htm>.

¹⁵ A third option employs staff or hired hands (“couriers”) to carry modest quantities on or in their person while traveling on commercial conveyances. For example, “body packers” swallow condoms containing up to a kilogram of cocaine or heroin before boarding an international plane flight. In terms of violence, this is more similar to bulk shipment in cargoes than accompanying shipments between ports of entry because, for obvious reasons, the couriers are not armed and rarely try to fight their way out of arrest.

at the time sought to prevent their citizens from obtaining easy access to cannabis.¹⁶

Flows of people to drugs are important, but limited. The flows of drugs to people are more important because drugs are so compact and easily transported.¹⁷ If *businesses* in one country can *legally* produce and distribute cocaine or heroin, it will affect price and availability elsewhere. However, I stress the words “*businesses*” and “*legally*.” Many countries have *de-criminalized* possession of small quantities for *users* without having any meaningful effect on markets in other countries. (By *decriminalization* I mean reducing or eliminating criminal sanctions, but retaining minor sanctions such as fines, whereas *legalization* means making the activity truly and entirely legal—as with cannabis in Colorado and Washington and Uruguay.¹⁸)

The limited evidence available suggests that legalizing (as opposed to *decriminalizing*) personal possession and use has some limited effects on near neighbors (e.g., from drug tourism), but no meaningful effect on countries so distant that personal travel is expensive. The limited evidence available also suggests that *decriminalizing* business activity can have effects across borders. This might characterize the situations with cigarettes produced in the former Soviet countries and smuggled into Western and Central Europe to avoid taxes, or with medical marijuana production in California depressing cannabis prices throughout the western United States.

The evidence also suggests that providing drugs via a tightly controlled government monopoly need not affect markets in other countries. Some countries have treated heroin addicts with “heroin maintenance,”

meaning satisfying their craving for opiates with pharmaceutical-quality government supplied heroin, instead of—or in addition to—the more familiar policy of doling out pharmaceutical-quality government provided methadone.¹⁹ These policies have produced no meaningful effects on markets in other countries.

It also appears that the international connections are currently more significant for cocaine and heroin than for cannabis. Almost all cocaine and heroin crosses at least one international border before it is consumed, whereas domestic production of cannabis is increasingly common.

Table 2 summarizes these points and uses shading to indicate the types of actions that should properly be viewed as matters of international concern, rather than purely domestic policy choices. Accordingly, we can define two extremes on the spectrum of policy liberalization’s impacts on other countries:

- Decriminalizing marijuana possession and use should have little effect on near neighbors and effectively zero impact on more distant countries.
- Legalizing a commercial free market in cocaine or heroin production and distribution will affect other countries.

Logically the international community ought to shrug with indifference if one of its member states decides to *decriminalize* cannabis use, and by and large that is what has happened. The shrug may be accompanied by wagging fingers, diplomatic posturing, and stamping of feet, but it has rarely disturbed international relations or produced any meaningful

¹⁶ For more information on the Netherlands case, see Caroline Chatwin, *Mixed Messages from Europe on Drug Policy Reform: The Cases of Sweden and the Netherlands* (Washington, DC: Brookings Institution, 2015).

¹⁷ This generalization has some relatively unimportant exceptions; for example, fresh khat is bulky and perishable.

¹⁸ For more information on Colorado and Washington, see Mark A. R. Kleiman, *Legal Commercial Cannabis Sales in Colorado and Washington: What Can We Learn?* (Washington, DC: Brookings Institution, 2015); for more information on Uruguay, see John Walsh and Geoff Ramsey, *Uruguay’s Drug Policy: Major Innovations, Major Challenges* (Washington, DC: Brookings Institution, 2015).

¹⁹ Peter H. Reuter, *Can Heroin Maintenance Help Baltimore?* (Baltimore: Abell Foundation, 2009), http://www.abell.org/sites/default/files/publications/cja_HeroinMaintenance_0209.pdf; and Marica Ferri, Marina Davoli, and Carlos A. Perucci, “Heroin Maintenance for Chronic Heroin-Dependent Individuals,” *Cochrane Database of Systematic Reviews* 12 (2011), doi: [10.1002/14651858.CD003410.pub4](https://doi.org/10.1002/14651858.CD003410.pub4).

TABLE 2: DEGREE OF INTERNATIONAL IMPACT ASSOCIATED WITH DIFFERENT POLICY ACTIONS
 (DARKER SHADING INDICATES GREATER IMPACT ON OTHER COUNTRIES)

Category of Action	Activity Affected by Action	
	Personal Possession & Use	Commercial Production & Sale
Supply by tightly controlled government monopoly	No meaningful effects abroad	No evaluated examples
Decriminalization	No meaningful effects abroad	Some effects on supply elsewhere, e.g., medical marijuana production in California depresses prices in other states
Legalization	Affects near-neighbors, e.g., via drug tourism	Never attempted, but one would expect major effects on supply elsewhere, even in distant countries

retaliation.²⁰ However, if one country contemplates legalizing a commercial free market in cocaine or heroin, then all countries are stakeholders in that decision. So in this paper, I focus on a decision to legalize commercial cocaine production and distribution.²¹

The Players

There are four categories of players in this game, and within two categories one must further distinguish between a first-mover (the country that legalizes first) and others that legalize later, or not at all:

1. Final market countries (primarily the United States and Europe for cocaine, but also Russia, China, and the Middle East for heroin).
2. Cocaine producers (Bolivia, Colombia, Ecuador, and Peru), distinguishing the one that legalizes first from the other three.²²
3. Transshippers (including Guatemala, Honduras, and Panama in Central America, and

numerous Caribbean nations and West African nations), again distinguishing the one that legalizes first from the others.

4. Neighbors who share a land border (Mexico vis-à-vis the U.S. market; in the future perhaps Belarus, Moldova, or Albania vis-à-vis the European Union).

There are also some “mixed types”: Brazil is both a large consumer and transshipper.

Scenario #1: A Producer Legalizes

Suppose a producer legalizes. Any single nation can produce enough cocaine to supply the entire world.²³ So unless the other producers follow suit, one would expect that in relatively short order the entire industry would migrate to the first-mover, where production would be free from enforcement risk and also able to take advantage of mechanization and other economies of scale. Hence, legalization by one

²⁰ Former French President Jacques Chirac in particular was vocal in his anger at Dutch policy, and the Netherlands did agree to cut the sales limit from 30 grams to five grams and reduce the number of coffee shops. See Tom Buerkle, “Dutch Drug Tolerance is Under EU Pressure,” *New York Times*, November 29, 1996, <http://www.nytimes.com/1996/11/29/news/29iht-dutch.t.0.html>.

²¹ Most of the world’s heroin is produced in Afghanistan, which is already something of a failed state with respect to enforcing its narcotics laws and imposing economic regulation more generally. It is not entirely clear whether legalized heroin production in Afghanistan would look much different than illegal production does today; in Afghanistan, even a legal heroin industry might still have to hire armed soldiers to defend itself. I leave exploration of legalizing a heroin industry to a future paper.

²² There is some question as to whether Ecuador belongs on this list. To date, it has been more involved in processing cocaine than growing coca, but the arguments below carry through regardless of whether Ecuador is seen as a potential producer.

²³ The United Nations Office on Drugs and Crime (UNODC) reports, “In the Andean region where coca bush is cultivated, the global area under coca cultivation amounted to 155,600 hectares in 2011.” That is equivalent to 1,556 square kilometers, which is just 13 percent of the arable land available in Ecuador, the smallest of the four coca producers. Furthermore, less than 5 percent of Ecuador counts as arable land; perhaps some of the remaining 95 percent might be suitable for coca cultivation even if it is not currently available for farming conventional crops. See “Illicit Crop Cultivation,” UNODC, <http://www.unodc.org/unodc/en/alternative-development/illicit-crop-cultivation.html>.

producer would almost immediately “solve” the drug problem in the other three producers—or at least its international dimensions. Presumably there would remain some modest black market to supply domestic consumption.

The “laggards” might suffer adjustment pains as people previously employed in illegal production shift to alternative employment or become unemployed. Indeed, even the first-mover would have some adjustment issues; while some peasants might continue to farm coca, others might be displaced by mechanization, and the gun-toting “soldiers” would no longer have a role even in the first-mover country, so they would be “laid off” throughout the region.²⁴

However, to the extent that a source country genuinely wishes to be rid of the plague of illegal cocaine production, its simplest solution would be to convince one of the other three producers to legalize first. So a key question becomes, *would a producer prefer to be a first-mover or a laggard?* The first-mover might get to host all the production and reap all of the associated benefits in terms of employment and export income. On the other hand, it would bear the brunt of enmity and sanctions directed at them by resentful, conservative countries. A related question is, *would another producer rather be a “second-mover,” following in the first-mover’s footsteps, or instead be a “laggard” (i.e., eschew legalization entirely) and so extricate itself from the international drug trade altogether?*

It is unclear how big the legal cocaine production sector would be, but perhaps somewhere between hundreds of millions and low single digit billions of dollars per year. One thousand metric tons of global consumption multiplied by a \$1,000 per kilogram

export price after legalization would yield one billion dollars per year. However, producer prices may not remain that high, and if yield per hectare rose after legalization by more than consumption did, area under cultivation could decline.²⁵

Whatever the size of the legal cocaine industry, it would loom larger relative to Bolivia’s \$31 billion annual gross domestic product (GDP) than it would to Ecuador’s \$95 billion GDP, let alone Peru or Colombia’s considerably larger economies (\$202 billion and \$378 billion, respectively). By way of comparison, Colombia produces 7.8 million 60-kg bags of coffee per year. Multiplying by an international coffee price of \$5 per kilogram produces an annual value of \$2.3 billion. So while a post-legalization cocaine industry would be of not inconsequential size, it is not clear that a country the size of Colombia would want to risk becoming an international pariah over the chance to host that industry.

So Colombia and Peru might prefer to be laggards than first- or second-movers, making any threats they issue about legalizing first non-credible. The real question is whether Bolivia or perhaps Ecuador might want to legalize, and, if not, whether Colombia and Peru should incentivize them to do so as their illegal industry would then be driven out of business by legal production in Bolivia (or Ecuador). One version of this strategy would be for Colombia and Peru to put legalization “on the table” in international forums in order to break down objections to the idea, but all the while knowing that they are truly just trying to pave the way for Bolivia or Ecuador to take that step, rather than being genuinely interested in taking such a gamble themselves.

²⁴ One concern countries should have about legalization is that laid-off soldiers might not immediately settle down into peaceful pursuits. It is possible that alternative criminal careers, such as kidnapping or extortion, could generate as much violence per soldier as the drug trade does now; this is already happening in Mexico, where the illegal drug market has been greatly disrupted. Moreover, in some countries (such as Colombia) violence can occur even in industries that produce legal goods, as happens with African palm oil, coal, and gold. Thus anticipated reductions in violence following legalization might not fully accrue for some time, if at all.

²⁵ Modern farming methods often improve yields. The Australian poppy industry produces nearly 50 percent of the world’s concentrate of poppy straw for the pharmaceutical industry on just 10 percent of the acreage devoted to its production globally, producing eight times the yield per hectare as Turkey. Fist, “The Tasmanian Poppy Industry: A Case Study of the Application of Science and Technology.”

Effects on Transshipment and Neighboring Countries

If one country, such as Bolivia, legalized production that would in one stroke solve the drug problem for the other producers, it is not clear how such a move would affect transshipment countries and, more particularly, neighbors who share a land border with the major markets where we assume cocaine would remain illegal, at least for some time.

One possibility is that the legal cocaine industry in Bolivia could export more or less directly to black markets in the final market countries for example, by hiding the drugs within legitimate cargo carried by standard international cargo transport lines (either by air or sea). Cargo shipped directly from Bolivia might be suspect, but it would not be hard for front companies in Bolivia to partner with corrupt companies in Brazil to produce goods for export into the global market that have cocaine hidden within them or within their containers and packaging.

If that happens, there would be no more need for go-fast boats, drug drops from private airplanes, or any of the other paraphernalia of today's international trafficking industry (except perhaps between Bolivia and Brazil). Today's transshipment and near-neighbor countries would be cut out of the drug distribution network and their problem solved. (They would still have their own domestic consumption and associated local black markets, but those volumes would be far smaller than their current black markets which also transship to final market countries.)

Another possibility, though, is that final market countries could detect drugs secreted amidst legitimate cargo, even if it is routed through front companies in other places. In that case, the exporters would need to find some less competent or more corruptible

place near the final market countries, ship the drugs to that location within general cargo, and then revert to the familiar cloak and dagger international smuggling for the "last mile" crossing into the final market country over a land border. For example, Brazilian front companies (who source from Bolivian legal producers) would ship to Mexico and Belarus cocaine that was hidden within general cargo just well enough not to be noticed by a customs official who had been bribed not to look closely. Then the drugs would be smuggled across the U.S. border by existing Mexican drug trafficking organizations (DTOs) and trucked into Western Europe by the organized criminal enterprises that now truck tax-evasive cigarettes across the European Union's (EU) relatively porous land border. Under this scenario, Bolivia's legalization would not solve Mexico's drug problem, and might merely shift European supply routes away from West Africa and the Iberian Peninsula and toward Eastern Europe.²⁶

It is important to stress just how irrelevant Bolivia's legalization might be for Mexico in this case.²⁷ All that would happen is that Mexican DTOs would source the cocaine somewhat more cheaply, via cargo shipment from the Brazilian front companies, rather than from Colombia and Ecuador via semi-submersibles or other covert smuggling techniques. But their operations within Mexico and at the Mexican-U.S. border would be unchanged. They would still reap enormous profits arbitraging the price jump between U.S. markets and Latin American ones by killing and corrupting Mexican law enforcement, while waging bloody battles with each other over the property rights to those illegal rents.

Indeed, even if Mexico legalized cocaine, moving that cocaine across the border into the United States would remain illegal, and while prices in the United States would presumably fall—giving the United

²⁶ Cocaine is very compact and potent, so distance is really no object for air transport. All the cocaine consumed in the European Union (EU) in one year would fit in one (very large) cargo plane. So the priority would be finding a country with corruptible officials from which there are land routes to the EU, rather than minimizing the flight distance from Brazil.

²⁷ Even if Mexico prevented its own customs officials from being bribed into turning a blind eye to these cargo shipments from Brazil, they could not prevent that from happening in one of the smaller Central American countries, which would again leave intact the "need" for the part of the drug trafficking chain that plagues Mexico today.

States a legitimate reason to be angry with Mexico — prices would remain high enough to give enterprising criminals an incentive to arbitrage that price difference. Conceivably widespread availability would enable non-violent “Mom and Pop” smugglers using low-tech means to drive the violent DTOs out of the smuggling market. But it seems at least as likely that DTOs would continue to dominate those smuggling operations and so continue to create problems for Mexico.

Thus another key uncertainty is *whether a producer that legalized would ship all the way to final market countries by hiding the drugs within legitimate cargo*, or whether they would only send the drugs as far as a neighboring country with corruptible officials, leaving the final steps to be conducted by violent criminal enterprises substantially similar to those operating today. If “yes”, then Bolivia’s legalizing would solve Mexico’s drug problem, and Mexico—like Colombia and Peru—would have an incentive to pave the way for Bolivian legalization. If “no”, then Bolivia’s legalization would only solve the trafficking problems of transshipment countries, and not the problems of near neighbors.

One argument why the answer may be “no” is that if a country that legalized cocaine could ship directly to final market countries, then Bolivia would already be doing so given that its central state is not all that powerful. In other words, since Bolivia does not try very hard to prevent producers from shipping cocaine out of the country in containers, then the fact that this method is not employed today may be because final market countries can block such shipments at the arrival end. On the other hand, Bolivia’s lackluster enforcement may be sufficient to deter the lawyers, accountants, and other white-collar professionals who would be involved in setting up front companies, even if it does not deter conventional drug trafficking.

Scenario #2: A Transshipment Country Legalizes Before a Producer

Another possibility is that a transshipment country (e.g., Honduras) legalizes first. One would expect more or less all of the global cocaine trade to gravitate to that country, solving the drug problem for its peers. In this scenario, Honduras legalizing cocaine would solve Grenada and Panama’s drug problems. It would then become very easy for kingpins in producer countries to ship cocaine to Honduras within general cargo. Inspections on goods departing a country are generally not that extensive, and Honduran customs officials would have no reason to interfere with the importation of cocaine that is legal there.

The big question for Honduras is similar to the one raised in the first scenario. Could a country where cocaine is legal ship to final market countries by hiding the cocaine within legal cargo, or would the final mile be handled by conventional organized crime gangs?

If Honduras could ship directly to final market countries, then Mexico and Central American countries would be cut out of the drug distribution business, and Honduras would host a large but not necessarily violent criminal industry. Criminals would include corrupt lawyers and business school graduates skilled at setting up front companies and bribing customs officials. They would not, however, physically accompany the drugs in transit, so they would not need to hire armed thugs to watch over the drugs in transit. Nor would they need to hire soldiers to protect the cocaine while it was warehoused in Honduras; rather they would just lock it in a safe and call the police if anyone tried to burglarize their (legal) cocaine warehousing operations. Honduras would therefore host a bevy of criminals making a lot of money, but the nature of that criminal activity would be more akin to that of off-shore banking havens than that of drug trafficking as we know it today.²⁸

²⁸ However, Mark Kleiman observes that the history of Las Vegas and gambling suggests thugs may hang around for quite a few years, even after economic logic suggests they have no long-run comparative advantage (personal communication).

However, if the only way to get drugs into the United States was through the hands of Mexican DTOs, then Mexico would continue to host powerful and violent DTOs, and those DTOs would probably base their headquarters in Honduras. In that case, Honduras would look more like a narco-state than an offshore banking haven.

To the extent that Honduras thought it was spiraling down into a failed state anyhow, it might be inclined to roll the dice and hope the result would be similar to an offshore banking haven rather than a failed state. It might, however, hold out hope that Guatemala will roll the dice first. If Guatemala and Honduras are both collapsing into narco-states and believe that even after legalization, they would need the services of Mexican DTOs to get the drugs across the U.S. border, then they could become locked in a game of chicken (a childhood game, but with immensely higher stakes). Whichever blinked first would lose, as it would be occupied by Mexican DTOs. But if neither blinked, they might both crash and end up in essentially the same sorry situation.

Now suppose instead that Guatemala and Honduras both believe that after legalization they could ship directly to final market countries, and both would prefer being a semi-pariah haven of cocaine transshipping amidst general cargo to becoming relatively free of international drug distribution because some other peer country moved first. In that case, both might rush to move first. However, both should expect the other to rapidly follow suit, which would consequently force them to divvy up the market for shady exporting, not reap all of the fruits themselves. Indeed, if more or less any random country could ship directly to final markets, then there might be any number of small, corrupt, criminal-friendly countries that would join in.²⁹

As a final note: when contemplating whether Honduras would prefer hosting commercial drug exporting over being drug-industry free, one has to think about the pros and cons not only for the country's populace as a whole, but also ask the question from the perspective of the elite who hold the political power. The policy interests of the public more generally may not align with those of the elite, and within the elite, policy preferences of the corrupt elite could differ from those of the law-abiding elite.

Response of Source Countries

If one or more transshipment countries such as Honduras legalized, it might make legalization more appealing for a producer. Shipping cocaine from a legal producer to another country that had legalized would not involve any criminal activity or violence, and legalizing production would drive the crime and illegality out of the production sector. Also, one might expect the severity of sanctions and retribution from the international community to be smaller for the second country that legalized than for the one who moved first. Again, legalization would likely appeal most to the smaller producer countries (e.g., Bolivia) for whom the industry would be relatively more important, than to a larger country with a more diversified economy (e.g., Colombia) which might care more about international relations.

Let us presume for the moment that if a transshipment country legalized, then at least one source country would also do so. The extent to which anticipation of that response affects the first-mover transshipment country's incentives depends on whether the source country would want to host the exporting end of illegal cargo shipments. If not, then Honduras would continue to have substantial illegal income. But if yes, then criminal exporters in Honduras might face

²⁹ Fully analyzing this situation in a game-theoretic sense could get quite complicated if one modeled ease of shipping directly to final market countries as an uncertain parameter. It might involve something akin to the winner's curse in auction theory, in which if country A is the only country that concludes legalizing is a good idea, it might infer from that fact that it has misjudged the key parameter. For a more in-depth discussion of auction theory and the idea of a "winner's curse," see Kenneth Steiglitz, *Snipers, Shills, and Sharks: eBay and Human Behavior* (Princeton, NJ: Princeton University Press, 2007).

considerable competitive pressure from the criminal exporters in Bolivia/Brazil; physical distance traveled matters relatively little given the light weight of drugs and use of commercial transport, as well as the benefits of cutting out a middle-man.

Now, even if Honduras anticipated that a subsequent Bolivian legalization would cut Honduras out of the business of distributing partially-legalized cocaine, that might not lead Honduras to rue a decision to legalize first, since Honduras would still be rid of the plague of international trafficking of illegal drugs. Indeed, under certain preference orderings of the various outcomes, it might make sense for Honduras to legalize even if it would dislike hosting that sort of export industry precisely because it would anticipate Bolivia's subsequently driving that Honduran enterprise out of business. But it does underscore that making a lot of money in the re-export business could be hard, because if re-export is profitable, it would likely also be appealing to export directly from the producer nations after they legalized.

The Perspective of Final Market Countries

To the extent that final market countries like the status quo, their principal strategy ought to be threatening harsh punishment for whichever country legalizes the cocaine industry first. If no country legalizes first, then no country legalizes, and the status quo is preserved. It is not entirely clear how to operationalize this concept; the days when the major powers felt free to invade recalcitrant Latin American nations have long since passed, and bellicose threats are hardly conducive to warm relations in the interim. Most realistically, the first-mover might face massive economic sanctions with palpable political, social, and economic effects (particularly if it is a small and relatively weak country like Bolivia), and its strength would depend on how easily it could evade the sanctions by trade—licit or illicit—with neighbors, for

example. Arguably the United States has done an outstanding job of cultivating a reputation for being a bully precisely in this regard; however, it may actually have little bite with which to back up its bark if a Latin American nation were to call its bluff. Plus the ability and/or desire to bully in this way has been substantially undermined now that four U.S. states have legalized a commercial marijuana industry.³⁰

Suppose, for whatever combination of reasons, the final market countries concluded that they could no longer deter a first-mover from legalizing. Do they care who moves first? Again, consider two cases, depending on whether a country that legalized could ship directly to a final market country.

If the United States could deter direct shipment, then cocaine would still be routed through Mexico and, for better or for worse, the United States would largely succeed in perpetuating the status quo. Mexican DTOs would be able to source the drugs at a somewhat lower price, but that might be of little consequence since even today the price DTOs pay to obtain their supplies is a tiny fraction of the retail price in the United States. Most of prohibition's effects on prices for U.S. users comes from the cost of crossing the U.S. border and distributing drugs within the United States.³¹

The outcome for Europe and Russia might be quite different. Even if European countries could deter direct shipment, any one nation legalizing cocaine might affect cocaine distribution to Europe because of the different geography. It is not so difficult for cloak and dagger smugglers to transport cocaine from Colombia up through Central America to Mexico; none of the hops exceeds the cruising range of general aviation aircraft or semi-submersible submarines. So it does not matter much whether cloak and dagger smuggling starts in Colombia or Mexico. That is not at all the case for the EU's near-neighbors to the

³⁰ For additional information, see Beau Kilmer, *Back in the National Spotlight: An Assessment of Recent Changes in Drug Use and Drug Policies in the United States* (Washington, DC: Brookings Institution, 2015).

³¹ How a rise in the relatively low upstream prices would affect retail prices in the United States has been subject to much thought and debate over the last 25 years. See, for example, Jonathan P. Caulkins and Peter H. Reuter, "How Drug Enforcement Affects Drug Prices," *Crime and Justice* 39, no. 1 (2010): 213-271.

east. The only way to get cocaine from South America to Belarus is within general commerce; it is out of the range of cloak and dagger smuggling. To date, the Belarus route has lost out to the more direct route of shipping containers through Spain or the Netherlands—a path that involves shipping surreptitiously, rather than corrupting customs officials in Europe. However, when the cocaine industry is legal at the origin, it might become very inexpensive to ship containers to a destination where officials are corruptible. And with all due apologies to those offended by this statement, countries like Belarus, Moldova, Ukraine, and Albania score abysmally on standard assessments of levels of corruption.³² So it is plausible—though far from certain—that if any one nation legalizes, that could have a bigger effect on European (and Russian) cocaine markets, than it does on U.S. markets.³³ So logically those countries ought to be barking alongside the United States to deter any first-mover. To date, Russia has partially embraced that role, but the Western and Central European nations have not.

Now suppose instead that final market countries cannot block direct shipment within commercial cargo. To some extent, the jig is up; final market countries would then not be able to avoid an increase in supply and a decrease in price. Their question would then become how to minimize those effects. One possibility is that they conclude that prohibition has become futile and themselves capitulate and join in the legalization. Another possibility would be to concentrate the legal industry in one distant country. Presumably enforcement against container shipping would be less impossible if the cocaine came from just one country, and ideally a country with which the final market country has only modest legal trade. That suggests that the United States (and Europe) would prefer if just one nation legalized, and that nation were Bolivia and not, say, Colombia or a nation close to U.S. (or European) borders. It would be worse for the United States if Honduras legalized first, and then Bolivia followed suit (as discussed above).

So if the United States thought it could not thwart direct container shipments, then it ought to delay any nation legalizing for as long as possible. At some point, prevention might prove impossible, in which case it would be in the U.S. interest to ensure that it is Bolivia, not a Central American country, which moves first. And the United States should create the impression that it would punish a second-mover just as vigorously as it would punish Bolivia. Indeed, the United States might want to invent some way to excuse Bolivia from the harshest treatment, to induce it to jump first, while still preserving a credible retaliatory threat against a second-mover closer to home. For example, the United States might indicate that countries that have hosted a coca culture for hundreds or thousands of years merit exceptional privileges, whereas countries without such traditions are pure mercenaries deserving of the full wrath of retaliation.

To date, the United States has not made such distinctions, either because it has not thought through this chain of reasoning or because it disagrees with one or more of the suppositions along the way (e.g., that it will be unable to block direct shipments). Indeed, even I as author of this line of reasoning, am unconvinced that the analysis of the moves and counter-moves in this game is all correct. And so it is time to close and turn the analysis over to the collective wisdom of the community of scholars.

Conclusion

The goal of this paper is to think through strategic interactions among various nation states that are stakeholders in the strategic “game” of possibly legalizing commercial production and distribution of cocaine and thereby abandoning the traditional drug control treaties. At a minimum, I hope to have shown that this enterprise is intricate, interesting, and important—and hence merits further analysis. I would be shocked if, looking back after 20 years, all or even

³² See “Corruption Perceptions Index 2014: Results,” Transparency International, <http://www.transparency.org/cpi2014/results>.

³³ It would perhaps have a larger effect on West Africa as well. Under this theory – that it is easier to penetrate a prohibitionist market across a land border – legalization plus transshipment through one of these Eastern European states might cut West African nations out of the supply chain.

a majority of the particular speculations discussed prove true. My goal is to raise questions and provoke discussion, not to provide definitive answers. I would tentatively suggest, though, that several particulars are sufficiently plausible to consider as working hypotheses, including:

- It is not in Colombia's interest to legalize cocaine. If Colombia believes legalization would help, it ought to encourage Bolivia to take that step, but then not follow suit, allowing Bolivia's legal industry to undercut Colombia's illegal producers. The United States might well concur with this strategy.
- A similar "after you" logic may apply to Guatemala, Honduras, and perhaps some other Central American countries. However, their situations are more symmetrical, making the final equilibrium less predictable, and increasing the risk of a stalemate game of chicken.
- Legalization elsewhere only solves Mexico's problem if countries more distant from the United States are able to ship directly to the U.S.; otherwise legalization still leaves the "final mile" in the hands of Mexican trafficking organizations.
- Europe does not presently have a Mexico—meaning a penetrable country sharing a large land border—but legalization in South America could turn a country such as Belarus or Moldova into a functional equivalent of Mexico. That might increase cocaine's availability somewhat in Western Europe, and dramatically so in Russia.
- Two of the greatest uncertainties that influence how this game will play out are: (1) can a country that legalized ship directly to final market countries?; and (2) will hosting legal production bring important economic benefits, or should producer nations' goal be limited primarily to ridding itself of illegal production?

There are abundant avenues for further research, including: seeking values for the uncertain "parameters" of the games, formalizing these conjectures with

game trees, adding scenarios in which final market countries move first, replicating the cases for heroin and amphetamine-type stimulants, and simulating the games with actual decision makers, as in red-team vs. blue-team war gaming exercises. Also, I paid minimal attention to effects on consumption in source and transshipment countries. That is in part because the consensus among academics seems to be that the current problems with prohibition greatly exceed its benefits, including any dampening of use and abuse in those countries. However, even though prices in source and transshipment countries are far below prices in final market countries, legalization might push them down further (perhaps substantially in percentage terms) and make these addictive substances affordable to a broader swath of the population. To the extent officials in source or transshipment countries worry that legalization will increase domestic consumption, this would be an additional reason to favor strategies that involve getting someone else to legalize.

Policy Recommendations

The most basic recommendation from the analysis above is "think ahead." Even if all the particular predictions concerning moves and counter-moves fail to materialize, the meta-point remains that when it comes to legalizing the production of cocaine or heroin – as opposed to decriminalizing marijuana use – the actions of one nation affect outcomes in other nations, including both neighbors and distant nations.

In the past, analysts mistakenly used a "physical flow" model to assess drug interdiction. The (faulty) reasoning went, "every kilogram seized reduces consumption by one kilogram." Such thinking was naïve because it failed to anticipate the market response: when countries seize more, producers tend to ship more. Replacement may not be one-for-one, but it is substantial. It would be just as mistaken for analysts or policy makers today to use a "nation vs. nature" model to assess drug policy changes. It would be faulty to reason, "if country C did X and no one else changed their policy in response, then ..." When one country acts, it will alter the incentives for other countries.

This suggests that countries may wish to concentrate policy making regarding international drug treaties in the hands of bureaucracies that are practiced in such strategic thinking and in the translation of analysis into effective practice for inducing desired actions from other nation states. Even though the “drug war” metaphor has been thoroughly critiqued, there is—somewhat ironically—a need for “Cold War” style strategic thinking. This is not because there is a “war” dimension to drug policy, but rather because there is a strategic interaction dimension at the nation-state level.

Regardless of whether one thinks drug problems should be viewed through a public health or a law enforcement lens domestically, perhaps neither health nor law enforcement agencies should lead a nation’s strategic thinking concerning these treaties and their possible revision. To phrase this differently, if a health agency, law enforcement agency or a non-government organization wants to play a leading role at the 2016 Special Session of the United Nations General Assembly on the World Drug Problem, then it should need to demonstrate a capacity for diplomacy and game-theoretic analysis to earn the right to represent its country in those discussions.

This might require an uncomfortable shift in thinking. It is probably fair to say that most discussions surrounding international treaty changes are backward-looking, dwelling on failings of the status quo. And to the extent that discussions are forward-looking, they tend not to ask—at least not formally—whether the proposals constitute a Nash equilibrium, or what chain of self-interested moves can bridge the gap between the current state and that alternative outcome. Games as simple as the prisoner’s dilemma show the danger of ignoring other players’ incentives and interests when formulating one’s own strategy. The drug policy game is much more complicated, and therefore even more likely to punish those who pursue myopic strategies.

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