MYTHS AND FACTS ABOUT DRUG POLICY FORMULATION 1,2

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1 INTRODUCTION

The use of psychoactive substances is a historical-cultural phenomenon with medical, political, religious, and economic implications (Minayo and Deslandes, 1998). From the historical point of view, it is known that the relationship of humanity with psychoactive substances – for which we will also use the generic denomination drugs – is an old and lasting phenomenon: except for the populations inhabiting Arctic regions, utterly devoid of vegetation, there is not a single human group that has not been related to psychoactive substances (Escohotado, 1998). The motivations for such long-standing relationships were many: the search for pleasure, the relief of worries and tension, the mood control, and the expansion of consciousness, with alteration of their normal states (Filev, 2015).

It is noteworthy, however, that although the systematic use of psychoactive drugs has been a practice observed since ancient times, it was only during the 20th century that the use of some of those substances was consolidated as a field of attention, debate, and social and state concern (Fiore, 2008). From this moment on – raised to the level of a *social issue* – the drug issue began to be delimited by three main discourses: medicalization, criminalization, and moralization (op. cit.).

Therefore, the moralistic pressure on drugs – which dates back to the late 19th and early 20th centuries – not only preceded the laws on psychoactive drugs but served as a substrate for it (Rodrigues, 2008). Likewise, the incrimination of illegal drugs is socially legitimized by protecting the legal interest of public health (Taffarello, 2009).

Throughout the 20th century, a specific state action regarding the drug issue has become hegemonic: prohibitionism. A model that incorporates several aspects of moral panic about psychoactive substances. One of its important international milestones occurred in 1961, in the Single Convention on Narcotic Drugs, approved by the United Nations (UN) and sponsored by the United States (Fiore, 2012).

The genesis and spread of prohibitionism resulted from social, political, and economic factors. The political radicalization of the North American Puritanism, the fear of social elites about urban disorder, the geopolitical conflicts of the 20th century, and the interest of the medical and pharmaceutical industry for the monopoly of drug production contributed to the construction of its hegemony. Among all psychoactive substances, the main targets of contemporary prohibitionism were those derived from *cannabis* (marijuana), coca (cocaine/*crack*), and poppy (opium and heroin) (Fiore, 2012).

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Knowing the discourses that permeate the approach to the drug issue and considering that prohibitionism, by establishing arbitrary limits for the use of legal and illegal drugs, modulated the contemporary understanding of psychoactive substances and even the scientific production related to them (Fiore, 2012), this work aims to analyze some myths and facts that permeate the drug policy formulation.

In the next section, we will seek to evaluate, in the light of scientific evidence, the assumptions and conceptions of the prohibitionist paradigm (Fiore, 2012) and the war on drugs ideology (Faria, 2017), in addition to other common-sense beliefs about illegal psychoactive substances, jointly referred to herein as myths about the drug policy formulation.

To facilitate the reader's understanding, we will divide those myths into the following three categories: those related to the nature of illegal psychoactive substances or associated with the risk of using drugs; those associated with the desired results with their prohibition; and those associated with the feared consequences of their decriminalization.

2 MYTHS RELATED TO THE NATURE OF THE ILLEGAL PSYCHOACTIVE SUBSTANCES AND THEIR RISK OF USE

Concerning the drug issue, decades of approximation between the discourse of medicalization and criminalization have resulted in a widespread conception that the use of any of the prohibited drugs would be physically and mentally harmful – which could occur in the short or medium term and could even lead to death due to general deterioration of health or accidental intoxication (overdose) (Fiore, 2012).

According to Fiore (2012), is widespread the idea that illegal drugs, in general, would easily cause addiction, since the first pleasurable consumption would lead to repeated use, substitution for more potent substances, loss of self-control, and even violence, given the difficulty of users to afford other doses.

To evaluate the validity of these conceptions in the light of scientific evidence, we consider relevant data available about the risk of toxicity associated with the acute use of legal and illegal substances, the potential of both types of substances to cause addiction, as well as the perception of the risk of use for users and society according to experts.

To compare psychoactive substances according to their acute lethal toxicity, Gable (2004) established the security ratio for a list of legal and illegal substances based on a broad review of literature data, comparing their lethal acute dose with the most commonly used for non-medical purposes.

The data obtained by the author allow us to understand that the potential of a substance to cause a fatal acute intoxication is not directly related to its legal status. Therefore, regarding this aspect, marijuana and lysergic acid diethylamide (LSD) demonstrated a safety ratio around 100 times higher than alcohol, while cocaine presented a 50% higher safety ratio (Gable, 2004). The major exception to this rule was the intravenous (injectable) use of heroin which, according to the same parameters, was shown to be only 20% less safe than alcohol (op. cit.) – a legal drug used by half of the adults and around a quarter of Brazilian adolescents (Laranjeira, 2014).

It should also be noted that this higher risk associated with the acute use of legal substances, compared to several illegal ones, was not an isolated finding. Other authors, using different methodologies have also classified alcohol as the substance associated with the highest risk on a

population scale (this being commonly underestimated) and tetrahydrocannabinol (THC) as being within safe limits, both in an individual and population assessment (Lachenmeier and Rehm, 2015).

Similar to the toxicity risks associated with acute drug use, the hegemonic conceptions related to the potential of illegal drugs for causing addiction and the risks that their use may entail to users or third parties are also inconsistent, given the evidence.

Among all those who come into contact with these substances – in 2015, approximately 250 million people used some drug worldwide – around 12% developed a pattern of risky use, developing dependence and needing clinical treatment (UNODC, 2017).

Likewise, European experts from several areas related to the drugs issue, when assessing the ability of these to cause harm to users or third parties, have shown that the legal *status of* a psychoactive substance does not directly correlate with its ability to cause harm. Again, alcohol was the most harmful among the 20 substances analyzed (Nutt, King and Phillips, 2010; Van Amsterdam et al., 2015).

Along with a misperception of the risk associated with the use of legal and illegal psychoactive substances, prohibitionism spread, through the classification and control of drugs, the idea that illegal drugs had virtually no therapeutic potential.

Therefore, only some psychoactive substances, such as opioids, benzodiazepine tranquilizers, and amphetamines, are allowed to be used in medical treatments for conditions such as pain and Attention Deficit Hyperactivity Disorder (ADHD), while methylenedioxymethamphetamine (MDMA) and psychedelics are prohibited and are not available for therapeutic use, or, as in the case of *cannabis*, are not yet regulated worldwide (Nutt, King and Nichols, 2013).

This condition does not correspond to the scientific evidence regarding the potential therapeutic use of prohibited substances. The *cannabis* derivatives present evidence of efficacy in treating spasticity associated with multiple sclerosis (Zajicek et al., 2012) and Human Immunodeficiency Virus (HIV)-associated painful neuropathy (Abrams et al., 2007).

There is also the possibility of using *cannabis* as a symptomatic treatment for post-traumatic stress disorder (PTSD) (Passie et al., 2012) and one of its cannabinoids, cannabidiol (CBD), as an adjuvant in the treatment of patients with severe and refractory epilepsy, beginning in childhood (Stockings et al., 2018).

Regarding MDMA, its use has already been approved by the Food and Drugs Administration (FDA) as an innovative therapy (breakthrough therapy) for the experimental treatment of patients with PTSD, having been demonstrated to have sustained symptomatic relief of the symptoms in patients non-responsive to traditional therapies (Mithoefer et al., 2013).

In the same way, LSD diethylamide, in a single dose, has beneficial effects in treating disorders associated with alcohol use, validated in a meta-analysis (Krebs and Johansen, 2012). There is also a demonstration of the potential benefits of using LSD as an adjunct to psychotherapy in patients with life-threatening diseases (Gasser et al., 2014).

For last, it is worth outlining that the form of drug regulation associated with the hegemony of prohibitionism has constituted a significant obstacle to the scientific research of prohibited substances (Nutt, 2015).

3 MYTHS RELATED TO THE RESULTS INTENDED BY THE DRUG PROHIBITION

In the war on drugs ideology and prohibitionist paradigm, there are conceptions related to the expected results of prohibition policies for certain drugs.

Faria (2017) highlights the ideal perspective that illegal drugs and their use can and should be eradicated, as well as encouraging forms of incarceration – criminal or sanitary – as a solution to the drug issue. There is an understanding that the state's ideal action to fight drugs is to criminalize their circulation and use (Fiore, 2012). There is also the idea that drug prohibition would protect the legal interest of public health (Taffarello, 2009).

Nothing could be further from reality. Despite the commitment adopted by the UN in 1998 that member countries adhere to strategies to eradicate or significantly reduce the illegal cultivation of coca, *cannabis*, and poppy (the same applies to synthetic psychoactive substances) by 2008 (White, 2012), illegal psychoactive substances are still used, driving a highly profitable trade and stable demand (Souza, 2015).

Similarly, mass incarceration (Moore and Elkavich, 2008; Brasil, 2017) and violence associated with drug prohibition (Werb et al., 2011) did not improve access to health and did not reduce health risks.

There is an increased prevalence of substance use disorders in the prison population, as demonstrated by international (Fazel, Bains and Doll, 2006) and national (Canazaro and Argimon, 2010) data. The Brazilian prison population still has a risk 28 times higher than the general population of contracting tuberculosis and a rate of intentional violent deaths more than six times higher than observed throughout the country, in 2013 (Brasil, 2014).

Outside of prisons, prohibitionist drug policies are also associated with violence. A prominent international example is the case of Mexico, where the decision of the former president, Felipe Calderón, in 2006, to use military force in civilian areas to fight trafficking led to an epidemic of violence that also spread through Central America (OAS, 2013).

In Mexico, the increase in deaths by homicide, especially among young people, prevented the increase in life expectancy among men in the country and, in some states, seemed to be the main responsible for the decrease in life expectancy among men aged 15 to 75 years (González-Pérez, Vega-López and Cabrera-Piraval, 2012). Also, in Latin America, Mejía and Restrepo estimated that around 25% of the homicide rate in Colombia is explained by the booming cocaine market and the war on drugs in the country (Mejía and Restrepo, 2013).

Likewise, the declaration of war on drugs by the president of the Philippines, Rodrigo Duterte, elected in 2016, was associated with an escalation of violence, incarceration, and preventable deaths (McCall, 2017), with more than 7 thousand deaths related to the implementation of this policy in a few months of government (HRW, 2017).

It is also worth demonstrating that drug prohibition policies are not applied equitably to the entire population but have a strong racial bias.

In the United States, the war on drugs is related to the erosion of legislation that restricts police action and an increase in police brutality directed at the minority of African Americans without a corresponding reduction in the use and trade of drugs on the streets (Cooper, 2015). Still, drug-related

crimes account for approximately half the federal prison population in this country, and black persons are six times more likely to be incarcerated than white ones (Sentencing Project, 2014).

Similarly, between 2009 and 2016, more than 20 thousand people were killed in Brazil as a result of police actions, primarily men, young and black people (FBSP, 2017). In our country, the crime that most singularly contributes to mass incarceration (and its consequent health risks) is drug trafficking, responsible for depriving 26% of the male and 62% of the female prison population of their liberty (Brasil, 2017).

Here, as in the United States, there is also an overrepresentation of black people in the prison population (64% versus 53% of black persons in the general population), who are also mostly young (55%) and have a lower level of education (80% have not completed high school) (Brasil, 2017).

We demonstrate, this way, that the prevailing ideas about the expected results of the application of prohibitionist drug policies – protection of public health, elimination of illegal substances, and equitable application of public policies – are not justified with accumulated scientific evidence.

4 MYTHS RELATED TO THE FLEXIBILIZATION OF PROHBITIONIST DRUG POLICIES

Despite the accumulated scientific evidence strongly pointing to the ineffectiveness and social and public health damage of prohibitionist drug policies, they continue to be implemented, and institutions are highly resistant to change them.

One of the factors contributing to this scenario is the fear associated with easing these policies, especially the idea that the easing of drug policies would lead to an indiscriminate increase in use. This conception, however, is not verified when the experiences of changes in legislation related to one or more illegal substances are analyzed.

When evaluating changes related to the pattern of use of marijuana after its decriminalization⁵ in Australia, Bretteville-Jensen and Williams (2011) observed that this flexibility seems to reduce the age people start to use it, keeping unchanged the proportion of the population that will begin using the drug. The same authors replicated this observation, that is, that the impact of decriminalization is concentrated in youth, but showed that this impact is restricted to the first five years following the implementation of the policy and is not observed after this period (Williams and Bretteville-Jensen, 2014).

Similarly, when evaluating data from drug policies in Europe, the United States, and Australia, experts have reported that no systematic relationship can be established between drug policies and the prevalence of the use of marijuana (Maag, 2003). The same study also concludes that the social costs related to restrictive legislation and the negative consequences of decriminalization of use can be solved by decriminalization (op. cit.).

There is also data available on the Portuguese experience of decriminalizing the use of all drugs. Authors who analyzed the results of this policy showed that, contrary to what was expected, there was no significant increase in use, and there was still a reduction in the problematic use and in the drug-related harm, as well as a reduction in the criminal justice burden (Hughes and Stevens, 2010).

^{5.} It is important to note that the concept of decriminalization refers to taking the use or possession of drugs out of the legal sphere while still maintaining trafficking as criminal conduct.

It is also interesting to note that the interpretation of the evidence generated by the Portuguese experience (which is positive, despite its nuances) has been made selectively by both pro and critics of decriminalization (Hughes and Stevens, 2012).

5 CONCLUSION

Drug policies were, throughout the 20th century, hegemonized by the prohibitionist paradigm that, being endowed with a strong character of moral panic about psychoactive drugs, promoted the dissemination of many myths related to these substances, the benefits of their prohibition and the harms of relaxation of legislation on the subject.

Over the last decades, the perpetuation of these misconceptions, or vague ideas, has produced negative impacts on public health and security, especially felt by the most vulnerable populations, such as problematic drug users and female and black populations.

In the scientific literature, accumulated evidence indicates the need to change prohibitionist policies on drugs and points out ways to carry out such changes.

Therefore, the decriminalization of drug possession for personal use and small sales, the reduction of police violence and discrimination, in the context of policing, the harm reduction approach, and the scientific evaluation of regulated markets are proposed paths for drug policy formulation based on the evidence available to date (Csete et al., 2016).

For last, we reiterate the need for a rigorous evaluation of the evidence produced from the experiences of easing drug policies since the selective use of evidence does not favor the construction of scientifically based and myth-free approaches.

BOX 1 Myths about drug policy formulation

- The use of illegal drugs is always problematic or leads to addiction.
- Illegal drugs are more toxic and have a higher chances of leading to death by overdose.
- Illegal substances were banned for causing greater harm to the user or society.
- Illegal drugs have no therapeutic use potential.
- Is it possible to eradicate illegal drugs and completely ban their use.
- The state should criminalize and punish the use and trade of drugs to solve the social issue of drugs.
- The criminalization of drug use and trade equally affects the entire population.
- Loosening drug policies would lead to indiscriminate increases in use.

Authors' elaboration.

BOX 2 Scientific evidence accumulated about the drug issue

- A minority around 12% of drug users evolve into a pattern of addiction and will require treatment.
- There are legal substances, such as alcohol, which are much less safe than many illegal drugs, in relation to the risk of causing death by overdose.
- There is no correlation between the assessed ability of a drug to cause harm and its legal status.
- Several prohibited substances have shown potential for therapeutic use according to scientific studies.
- Demand for drugs remains stable despite criminalization policies.
- The decriminalization of the use and of the small crimes related to the drug trade is justified by the accumulated scientific evidence.
- The criminalization of drug use disproportionately affects the poorest population, the black population and the female population.
- There was no significant increase in drug use in countries that relaxed their drug policies.

Authors' elaboration.

REFERENCES

ABRAMS, D. I. et al. Cannabis in painful HIV-associated sensory neuropathy: a randomized placebo-controlled trial. **Neurology**, v. 68, n. 7, p. 515-521, 2007.

BRASIL. Ministério da Justiça. Departamento Penitenciário Nacional. **Levantamento nacional de informações penitenciárias**: Infopen. Brasília: MJ, 2014.

_____. **Levantamento nacional de informações penitenciárias**: Infopen – atualização junho de 2016. Brasília: MJ, 2017.

BRETTEVILLE-JENSEN, A. L.; WILLIAMS, J. **Decriminalization and initiation into cannabis use**. Melbourn: University of Melbourn, 2011. (Working Paper, n. 1130).

CANAZARO, D.; ARGIMON, I. I. L. de. Características, sintomas depressivos e fatores associados em mulheres encarceradas no estado do Rio Grande do Sul, Brasil. **Cadernos de Saúde Pública**, v. 26, p. 1323-1333, 2010.

COOPER, H. L. F. War on drugs policing and police brutality. **Substance Use and Misuse**, v. 50, n. 8-9, p. 1188-1194, 2015.

CSETE, J. et al. Public health and international drug policy: report of the Johns Hopkins. Lancet, London, v. 387, n. 10026, p. 1427, 2016.

ESCOHOTADO, A. Historia general de las drogas. Madrid: Alianza Editorial, 1998.

FARIA, E. C. C. de. **Redução de danos em um contexto de "guerra às drogas"**: a formação sob a perspectiva de quem atua no SUS. 2017. Dissertação (Mestrado) — Universidade Estadual de Campinas, Campinas, 2017.

FAZEL, S.; BAINS, P.; DOLL, H. Substance abuse and dependence in prisoners: a systematic review. **Addiction**, v. 101, n. 2, p. 181-191, 2006.

FBSP – FÓRUM BRASILEIRO DE SEGURANÇA PÚBLICA. **Anuário brasileiro de segurança pública**. São Paulo: FBSP, 2017.

FILEV, R. Como você se comporta? Dilemas sobre as dependências de substâncias. In: BOKANY, V. (Org.). **Drogas no Brasil**: entre a saúde e a justiça – proximidades e opiniões. São Paulo: FPA, 2015. p. 103-118.

FIORE, M. Prazer e risco: uma discussão a respeito dos saberes médicos sobre o uso de "drogas". In: LABATE, B. C. et al. (Org.). **Drogas e cultura:** novas perspectivas. Salvador: EDUFBA, 2008. p. 141-154.

_____. O lugar do Estado na questão das drogas: o paradigma proibicionista e as alternativas. **Novos Estudos Cebrap**, n. 92, p. 9-21, 2012.

GABLE, R. S. Comparison of acute lethal toxicity of commonly abused psychoactive substances. **Addiction**, v. 99, n. 6, p. 686-696, 2004.

GASSER, P. et al. Safety and efficacy of lysergic acid diethylamide-assisted psychotherapy for anxiety associated with life-threatening diseases. **The Journal of Nervous and Mental Disease**, v. 202, n. 7, p. 513, 2014.

GONZÁLEZ-PÉREZ, G. J.; VEGA-LÓPEZ, M. G.; CABRERA-PIVARAL, C. E. Impact of homicide on male life expectancy in Mexico. **Revista Panamericana de Salud Publica**, v. 32, n. 5, p. 335-342, 2012.

HRW – HUMAN RIGHTS WATCH. "License to kill": Philippine police killings in Duterte's "war on drugs". New York: HRW, 2017.

HUGHES, C. E.; STEVENS, A. What can we learn from the Portuguese decriminalization of illicit drugs? **The British Journal of Criminology**, v. 50, n. 6, p. 999-1022, 2010.

_____. A resounding success or a disastrous failure: re-examining the interpretation of evidence on the Portuguese decriminalisation of illicit drugs. **Drug and Alcohol Review**, v. 31, n. 1, p. 101-113, 2012.

KREBS, T. S.; JOHANSEN, P-Ø. Lysergic acid diethylamide (LSD) for alcoholism: meta-analysis of randomized controlled trials. **Journal of Psychopharmacology**, v. 26, n. 7, p. 994-1002, 2012.

LACHENMEIER, D. W.; REHM, J. Comparative risk assessment of alcohol, tobacco, cannabis and other illicit drugs using the margin of exposure approach. **Scientific Reports**, v. 5, p. 8126, 2015.

LARANJEIRA, R. II Levantamento Nacional de Álcool e Drogas (Lenad) 2012. São Paulo: Unifesp, 2014.

MAAG, V. Decriminalization of cannabis use in Switzerland from an international perspective: European, American and Australian experiences. **International Journal of Drug Policy**, v. 14, n. 3, p. 279-281, 2003.

MCCALL, C. Philippines president continues his brutal war on drugs. **The Lancet**, v. 389, n. 10064, p. 21-22, 2017.

MEJÍA, D.; RESTREPO, P. The economics of the war on illegal drug production and trafficking. Bogotá: Universidad de los Andes, 2013. (Documento Cede, n. 2013-54).

MINAYO, M. C. S.; DESLANDES, S. F. A complexidade das relações entre drogas, álcool e violência. **Caderno de Saúde Pública**, v. 14, n. 1, p. 35-42, 1998.

MITHOEFER, M. C. et al. Durability of improvement in post-traumatic stress disorder symptoms and absence of harmful effects or drug dependency after 3,4 -methylenedioxymethamphetamine-assisted psychotherapy: a prospective long-term follow-up study. **Journal of Psychopharmacology**, v. 27, n. 1, p. 28-39, 2013.

MOORE, L. D.; ELKAVICH, A. Who's using and who's doing time: incarceration, the war on drugs, and public health. **American Journal of Public Health**, v. 98, n. 1, p. 176-180, 2008.

NUTT, D. Illegal drugs laws: clearing a 50-year-old obstacle to research. **PLoS Biology**, v. 13, n. 1, p. e1002047, 2015.

NUTT, D.; KING, L.; NICHOLS, D. Effects of schedule I drug laws on neuroscience research and treatment innovation. **Nature Reviews Neuroscience**, v. 14, n. 8, p. 577, 2013.

NUTT, D.; KING, L.; PHILLIPS, L. Drug harms in the UK: a multicriteria decision analysis. **The Lancet**, v. 376, n. 9752, p. 1558-1565, 2010.

OAS – ORGANIZATION OF AMERICAN STATES. **The drug problem in the Americas**. Washington: OAS, 2013.

PASSIE, T. et al. Mitigation of post-traumatic stress symptoms by cannabis resin: a review of the clinical and neurobiological evidence. **Drug Testing and Analysis**, v. 4, n. 7-8, p. 649-659, 2012.

RODRIGUES, T. Tráfico, guerra, proibição. In: LABATE, B. C. et al. (Org.). **Drogas e cultura**: novas perspectivas. Salvador: UFBA, 2008. p. 91-104.

SENTENCING PROJECTS. **Trends in U.S. corrections**. Washington: Sentencing Projects, 2014. Retrieved Aug. 10, 2018, from: https://www.sentencingproject.org/reports/trends-in-u-s-corrections/>.

SOUZA, T. S. de. **A economia das drogas em uma abordagem heterodoxa**. 2015. Dissertação (Mestrado) – Universidade Estadual de Campinas, Campinas, 2015.

STOCKINGS, E. et al. Evidence for cannabis and cannabinoids for epilepsy: a systematic review of controlled and observational evidence. **Journal of Neurology, Neurosurgery and Psychiatry**, v. 89, n. 7, p. 741-753, 2018.

TAFFARELLO, R. F. **Drogas**: falência do proibicionismo e alternativas de política criminal. 2009. Tese (Doutorado) – Universidade de São Paulo, São Paulo, 2009.

UNODC – UNITED NATION ORGANIZATION FOR DRUGS AND CRIME. **World drug report 2017**. Vienna: UNODC, 2017.

VAN AMSTERDAM, J. et al. European rating of drug harms. **Journal of Psychopharmacology**, v. 29, n. 6, p. 655-660, 2015.

WERB, D. et al. Effect of drug law enforcement on drug market violence: a systematic review. **International Journal of Drug Policy**, v. 22, n. 2, p. 87-94, 2011.

WHITE, T. The drug-free world. **Substance Use and Misuse**, v. 47, n. 13-14, p. 1637-1639, 2012.

WILLIAMS, J.; BRETTEVILLE-JENSEN, A. L. Does liberalizing cannabis laws increase cannabis use? **Journal of Health Economics**, v. 36, p. 20-32, 2014.

ZAJICEK, J. P. et al. Multiple sclerosis and extract of cannabis: results of the Musec trial. **Journal of Neurology, Neurosurgery and Psychiatry**, v. 83, n. 11, p. 1125-1132, 2012.

COMPLEMENTARY BIBLIOGRAPHY

GROTENHERMEN, F. The toxicology of cannabis and cannabis prohibition. **Chemistry and Biodiversity**, v. 4, n. 8, p. 1744-1769, 2007.

WHITEFORD, H. A. et al. The global burden of mental, neurological and substance use disorders: an analysis from the Global Burden of Disease Study 2010. **PloS One**, v. 10, n. 2, p. e0116820, 2015.