Willian Douglas Guilherme
(Organizador)

A Produção do Conhecimento nas Ciências Sociais Aplicadas 3

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APRESENTAÇÃO

Os textos são um convite a leitura e reúnem autores das mais diversas instituições de ensino superior do Brasil, particulares e púbicas, federais e estaduais, distribuídas entre vários estados, socializando o acesso a estes importantes resultados de pesquisas.

Os artigos foram organizados e distribuídos nos 5 volumes que compõe esta coleção, que tem por objetivo, apresentar resultados de pesquisas que envolvam a investigação científica na área das Ciências Sociais Aplicadas, sobretudo, que envolvam particularmente pesquisas em Administração e Urbanismo, Ciências Contábeis, Ciência da Informação, Direito, Planejamento Rural e Urbano e Serviço Social.

Neste 3º volume, reuni o total de 25 artigos que dialogam com o leitor sobre temas que envolvem direito, políticas públicas, crianças e adolescentes, o papel da legislação, grêmio estudantil e aspectos legais, assédio moral no trabalho, aborto, orçamento público, dentre outros. São temas que se interligam e apontam críticas e soluções dentro das possibilidades das Ciências Sociais Aplicadas.

Assim fechamos este 3º volume do livro “A produção do Conhecimento nas Ciências Sociais Aplicadas” e esperamos poder contribuir com o campo acadêmico e científico, trabalhando sempre para a disseminação do conhecimento científico.

Boa leitura!

Prof. Dr. Willian Douglas Guilherme

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SMART DRUGS AND ETHICS

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ABSTRACT: Many of the new chemicals that have appeared in the last decades had the power of making people healthier not only in the physical state but also at the psychological state. The drugs that were initially created with the goal for treatment are now being used for other purposes such as cognitive enhancement of the memory. These drugs, when taken by healthy people, somehow boost the memory and therefore they get some good advantage over the others, especially when the scenario is a school/university test. This fact is enough to raise ethical concerns and questions such as: Will there be exams such as urine or blood in the future? How should society react to this phenomenon? What kind of effects is it going to have on the education system? Would it be legitimate to compare smart drugs as doping? Those are some questions that we may not necessarily have answers for all, but at least we want to discuss this issue a little bit deeper and have a better understanding about what is really going on.
KEYWORDS: Doping. Law. Medications. Ethics. Health.

RESUMO: Muitos dos novos químicos que surgiram nas últimas décadas tiveram o poder de tornar as pessoas mais saudáveis, não só no estado físico, mas também no estado psicológico. As drogas que, inicialmente, foram criadas com o objetivo de tratamento estão sendo usadas para outros fins, como o

aprimoramento cognitivo da memória. Essas drogas, quando tomadas por pessoas saudáveis, de alguma forma aumentam a memória e, portanto, essas pessoas obtêm uma boa vantagem sobre os demais, especialmente quando o cenário é uma prova escolar/universitária. Esse fato é suficiente para suscitar preocupações e questões éticas, tais como: haverá exames como os de urina ou sangue no futuro? Como a sociedade deve reagir a esse fenômeno? Que tipo de efeitos ele terá sobre o sistema educacional? Seria legítimo comparar drogas inteligentes como doping? Essas são algumas questões que talvez não possamos ter necessariamente respostas, mas, pelo menos, queremos discutir esta questão um pouco mais profundamente e ter uma melhor compreensão sobre o que realmente está acontecendo.
PALAVRAS-CHAVE: Doping. Lei. Medicamentos. Ética. Saúde.

1 I INTRODUCTION

The subject of this research is about the use of medications most known as *smart drugs*. In other words, medicines that has the potential of improving or enhancing the cognitive abilities of the human brain.

The problem comes up when these drugs, firstly created with the aim of treating some specific diseases, have been used and commercialized in an indiscriminative way by students and workers.

The subject, therefore, is justified because it brings contributions for the legal perspective, especially when it comes to the use or creation of specific laws to regulate/restrict the usage of such medications.

The goal of this investigation is to discuss the following questions: Will there be exams such as urine or blood in the future? How should society react to this phenomenon? What kind of effects is it going to have on the education system? Would it be legitimate to compare smart drugs as doping?

The methodology used in this research follows the hypothetical-deductive method and consists mainly from bibliographic analysis through books, articles, newspapers, leaflets and all sorts of material and instruments available on the Internet.

2 I WHAT ARE SMART DRUGS?

When we have a sore through we go to a store to buy some candies to get rid of the taste provoked by that condition. Usually, the same happens when we are suffering from a boring headache, we go to a pharmacy and buy some aspirin in a try diminish the headache. When we want to relax we might take a glass of wine or whiskey or maybe a cigarette, and oftentimes, even both of them. And when we want the opposite reaction, in other words, instead of relaxation we prefer to be more awake, we take a cup of coffee to feel more energized and motivated for our daily tasks. So, those examples are able to demonstrate that the whole world is under the use of some kind

of drug to cope more effectively with the necessities of each individual.

However, the doping was already present on the sports, especially during the competitions, when athletes bypass the rules using powerful substances that can stimulate endurance and force, giving them greater advantages and probabilities of winning towards their adversaries. The most common example that perhaps might come to our minds has to do with the usage of anabolic steroids to grow muscles. However, anabolic steroids can't only cause impacts on the body but also on the mind. And these affects normally happen because of the lack of medical prescription, and this is one of the main reasons that anabolic steroids are illegal. Nevertheless, the same substances are considered legal if they are prescribed to those people who are struggling from lack of weight or weight loss.

At the same way, Cocaine is an illegal recreational drug so that musicians, models and movie stars take it during wild parties and alcoholic night marathons. Nevertheless, the modest coca leaf - the raw material that is processed and concentrated to obtain the notorious white powder - has been used peacefully for hundreds of years in various communities of the Andes residents for a completely different purpose. One sheet of coca can be brewed as a tea known among the local population as *mate de coca*, or simply chewed for the extraction of juice (LEWIS, WEBSTER, n.d.).

According to Lewis and Webster (p. 170, n.d., our translation)

> Coca leaves in Inca culture were once used exclusively in religious ceremonies, as well as members of the royal family. Soon, the Incas of all classes were allowed to chew these leaves to enjoy soft euphoria, reduce appetite and increase stamina. Indeed, it is believed that the architectonic feat of the Inca people, the city of Machu Picchu, built at a great height, could not have been erected without the use of coca leaves.

But, here is the thing: "[…] the substance in its natural form has a stimulating and ergogenic (working capacity) effect and has no side effects, but after an artificial increase in its potential, the same substance can sow chaos in the individual's life and Society as a whole." (LEWIS; WEBSTER, n.d., our translation).

In this context, it's opportune to make a definition of smart drugs:

> Smart drugs, formally known as nootropics, are medications, supplements, and other substances that improve some aspect of mental function. In the broadest sense, smart drugs can include common stimulants such as caffeine, herbal supplements like ginseng, and prescription medications for conditions such as ADHD, Alzheimer's disease, and narcolepsy. These substances can enhance concentration, memory, and learning. (SAINT JUDE RETREATS, n.d. n.p., our griffin).

According to Bill (2012, p. 3): "There are many terms for intelligence enhancing drugs - cognitive enhancers, memory enhancers, smart drugs but they all try to do the same thing, boost the brain's ability […]."

Then, it's demonstrated that those are medicines that have the power to enhance the brain's functions related to the memory. In other words, it makes the individual more concentrated or motivated to do determine tasks.

2.1 'Getting smarter': the kinds of drugs most used

University students are taking those sorts of medications to keep up "[…] supernormal levels of concentration in the run-up to exams. […]". (TURNER; SAHAKIAN, n.d., p.79).

The workers and students "[…] they use these drugs not to escape work and avoid responsibility but to be able to work more and better." (CEDERSTRÖM, n.p., 2016). According to a study carried out on the Volgograd State University of Medicine, in Russia, the students who have taken the drugs before the exams had a performance 8% higher compared with those who haven't taken the drugs (RINCÓN, 2015).

Lewis and Webster (n.d.) signalize that the two main reasons why people are taking smart drugs are, firstly, because they want to get a competitive advantage over the others. Secondly, because it makes daily tasks less boring and thereby it increases productivity.

2.2 The ethical issue

Lately, new interesting moral dilemmas have arisen. Some doctors confessed that they feel morally obliged to take smart drugs when they are overworked and can't afford to commit any mistake while they're taking crucial decisions for the patient's life. Thus, they feel pressured under the moral obligations to take drugs such as Modafinil, with the goal of improving concentration and alertness (LEWIS; WEBSTER, n.d.,).

In accordance with the leaflet, Modafinil is used for

> […] adults who suffer from narcolepsy to help them to stay awake. Narcolepsy is a condition that causes excessive daytime sleepiness and a tendency to fall asleep suddenly in inappropriate situations (sleep attacks). Modafinil may improve your narcolepsy and reduce the likelihood that you will have sleep attacks but there may still be other ways that you can improve your condition and your doctor will advise you. (EMC, 2012, n.p.).

This drug is one of the most popular among students, workers and the military. Modafinil was first launched in France in 1994. This medication is so powerful that it can allow healthy individuals to stay awake for more than 60 hours without any side effect. The French Army, then started to use this medication not with the goal to become more intelligent but simply to prevent its soldiers from sleeping (NOGUEIRA; GARATTONI, 2017). Later on, the U.S military also realized this positive aspect brought by the drug and then introduced the drug among its troops in a try to cope with fatigue and stressful conditions (COSTANDI, 2012).

This medication is one of the most used around the world and is an effective cognitive enhancing drug that affects the task related motivation, in other words, the task that we found unenjoyable or not very interesting. This drug seems to make people more motivated to do it, which means that to some extent, it's an interesting workplace drug. Then, individuals in our society have been realizing it and healthy people have decided to use this drug for similar goals.

However, besides the unknown consequences that might happen after a long-term use of Modafinil, this drug still might provoke social problems. Costandi (2012, n.p.) highlights that

> another concern is that people could be coerced into using smart drugs. People who could enhance their cognitive function by using these drugs could gain an unfair advantage over others, pressuring those who may not want to use the drugs into doing so to keep up. The use of smart drugs could also increase social inequalities rather than reduce them, because not everyone can afford them.

Currently, in many parts of the world there is absolutely no regulatory framework to authorize the licensing of those drugs to be used in healthy people. So the question is: How do the students get the access to those drugs? And, the answer is pretty simple: Through the Internet. Sometimes, they even go further, seeking on the Deep and Dark Web in a try to buy those medications.

Even so, there are some drugs that are easier to get, and it just so happens because their license are extended not only to treat specific diseases but also to "[…] more broadly defined illnesses […]."(TURNER; SAHAKIAN, n.d., p.81).

The fact that many youngsters are buying illegal drugs in order to outperform their peers at school is very disturbing for several reasons. It is already alarming that healthy students are taking medicines that are available only through a medical prescription, without even thinking how dangerous it could be. In addition, we have to be aware about the fact that these drugs can be harmful when interacting with other medicines, creating a risk of overdose. The other thing is that these drugs are taken by young people whose bodies and brains are passing through many different sorts of transformations and as a consequence what happens is that the presence of those drugs could lead to disruption of vital functions inside the body and the brain.

There are three main implications about the smart drugs: health, distributive fairness, and competitive fairness (SCHESKE; SCHNALL, 2012). By this context, one of the concerns by using these cognitive enhancing drugs in healthy people is, first of all, regarding the safety issues. We have no long term studies in healthy people showing that these drugs are safe. So, we really need those studies before healthy people can use those drugs. Secondly, not everybody has the purchase power to buy smart drugs. Thus, the implication about distributive fairness "[…] describes the concern that people with resources have an unfair competitive advantage over those without […]." (SCHESKE; SCHNALL, 2012, p.508).

According to Dance (2016, n.p.):

> Many smart drugs are prescription medications either purchased illegally or used offlabel. Top choices include Adderall (amphetamine) and Ritalin (methylphenidate) — treatments for attention-deficit hyperactivity disorder (ADHD) — and modafinil, which is a medication for sleep disorders such as narcolepsy. In people with ADHD or sleep disorders, these drugs can raise brain function so that it matches that of healthy people. But it is not clear whether the same medications can push a neurologically healthy, well-rested individual onto a higher cognitive plane. There is also the question of side effects. Despite these uncertainties, the apparently

> widespread use of neuroenhancers has prompted an ethical debate about whether their use is fair in school exams or mental games.

However, this phenomenon doesn't only happen to students but it also happens to professors. According to Pells (2017, n.p.): "University professors are taking the same banned 'smart' drugs as their students to help them get through heavy workloads […]."

According to Pells (2017, n.p.), in the United Kingdom,

> Previous surveys suggest such drugs have become increasingly popular with students – with one suggesting as many as 25 per cent had taken them as a way of coping with workload pressures and increased emphasis on scoring good grades as higher education becomes an ever costlier endeavour.

Smart drugs only appeared with the aim of increasing and/or potencializing the memory's functions. These drugs originally were created for treatment not for enhancement. Notwithstanding, most of the people who are using those drugs are commonly healthy young students.

Neuropsychiatric disorders such as Alzheimer disease, Attention Deficit Hyperactivity Disorder (ADHD) where we have some good cognitive enhancing drugs. So basically, those drugs are use to boost cognition on the people who are in need of it such as those with neuropsychiatric disorders or brain injury.

Now, Ritalin 10 mg is indicated to patients who suffer from attention deficit and hyperactivity. According to its leaflet,

> […] Ritalin is indicated as part of a comprehensive treatment program that typically includes psychological, educational, and social measures aimed at stable children with a behavioral syndrome characterized by moderate to severe distractibility, attention deficit, hyperactivity, emotional lability, and impulsivity […]. (MEDICINANET, 2013, n.p., our translation).

Another concern comes from the society, Sahakian quoted by Davies (2010, n.p.), questions:

> […] are we all going to be taking drugs in the next 10 years and boosting our cognition in that way? And if we are, will we use them to have a shorter working week, so we can go home, spend more time with our families and have a good work/life balance? Or, will we go headlong into a 24/7 society where we work all the time because we can work all the time?

When the drugs are taken for short period of time the most common side effects are related to heart problems, hallucinations, Panic Syndrome and sometimes there is even the risk of addiction. Now, when it comes to the long term use of those drugs, the neuroscientists and researchers still don't have a pretty clear glimpse of what could happen. However, some studies made in rats point out that the sleep depravation (a common effect of some of the drugs) causes damages to the hippocampus which is a part of the brain responsible for the coordination of the memory functioning. And this process can happen very fast when, for instance, three days without sleeping are already enough to produce structures alterations on the brain. And when we talk about long term use, the results can have devastated and irreversible effects such as

depression, anxiety and even cause loss of intelligence making the individual stupid (BLOG ABRAMGE, 2015).

In a try to illustrate how these drugs can affect the health of whoever takes them, Lewis and Webster (n.d., p.174, our translation) give us a pretty good example: "[…] a bucket of water poured onto a burning tree can extinguish a fire, but the same bucket of water poured into a frying pan with tart oil can lead to serious problems." Therefore, we don't have enough scientific research to predict what it is going to happen in the future, after the long use of those drugs.

2.3 Should measures such as doping exams or laws be adopted in a try to restrict the use of smart drugs?

But, of course, we have to be sensitive enough to understand that smart drugs are not always a bad thing. If, for example, an airplane pilot takes these drugs and as a consequence it gives him more accuracy to perform a fly so that it would decrease the probabilities of mistakes and the risks of accidents as well. Then it would be legitimate to say that the drugs would prevent deaths in case the airplane falls and crashes against the sea or the earth.

The group that defends the free commercialization and use of smart drugs usually argues that these drugs can help those students who demonstrate more difficulties through the learning processes, and therefore, the smart drugs would help to reduce the gap between the students who are in advantage and the students who are in disadvantage.

We could also mention a surgeon who is influenced by the drugs and can accomplish a surgery in a higher state of concentration being able to safe more patients. Of course, those are abstracts hypotheses but both examples may give us a glimpse of the benefits generated by the drugs.

Another thing that we have to take into account is over the fact that higher temperatures can have a pejorative influence over our working memory so that we can't think clearly and we´ll always opt to the easier tasks (WARD, 2013). Indeed, for this particular case, the use of nootropics could help those people who work at higher temperatures environments such as steel welder, Road-surface contractor, volcanologist, among others.

As points out Turner and Sahakian (n.d., p.79): "Recent developments in drugs to improve memory and cognition certainly raise the prospect of drug-testing regimes in schools similar to those imposed on athletes. […]." So, the neuroethics discussion comes from what happens with doping in competitive sports.

Davies (2010) argues that the universities should adopt investigate measures against the doping, such as random testing before each exam, in order to tackle the increasing use of cognitive enhancement drugs. It just so happens because the use of such drugs has brought concerns inside the universities just because they're able to

give advantages for those who use to take it.

Notwithstanding, Mr. Cakic quoted by Health Editor and Laurance (2009), affirms that Caffeine is also a great enhancer of performance, it is used in both sports and academy and it's not seen as a form of cheating because it doesn't show strong side effects.

Most of countries have some kind of legislation to regulate the free usage commercialization of the smart drugs, where it's previously required a medical prescription to get the drugs. Moreover, theoretically, the doctors are taught to prescribe the drugs in accordance to what has been informed on the leaflet. Thus, just patients who really have some illnesses are going to take de drugs instead of healthy individuals.

At Duke University, it is not allowed to take medicines with the goal of enhancing academic performance. At the same way, The World Chess Federation often does drug tests. It just so happens because it was proved that nootropics such as Modafinil and Ritalin could help the performance in a chess game (RATHI, 2017).

In addition, a new law for smart drugs has been discussed in the United Kingdom since there is no regulation and/or prohibition over the issue. Thus, the new law aims to control the commercialization and usage of these substances (DREAM MARKET, 2016).

Indeed, it's a great discussion of whether or not the insertion or even the creation of new laws to ban smart drugs could be the solution for the problem of their carefree usage and commercialization. Thus, new laws could discourage people of taking the drugs before a university test, for example.

FINAL CONSIDERATIONS

Now, we can conclude that people are using it basically for three main reasons: one, healthy people want to get the competitive edge at university, or work, or school, or getting into a better university; the second reason seems to be to stay awake and alert for longer periods of time. Therefore, for instance, people use it because they have to work for long hours; the third reason seems to be for tasks that people have been putting off and haven't found motivated to do, it helps them to get stuck into the task and to do it (SAHAKIAN, 2016).

However, Turner and Sahakian (n.d., p.84) make a great interesting question: "[…] should education systems be restructured towards guiding students to lead fulfilling, responsible lives as adults, instead of being driven primarily by exam results? […]".

This kind of questioning is very profound and makes us to reflect about the way we as a society are conducting our lives. Nevertheless, one thing is for sure: Just the future will tell us whether these medications are safe or not, and how society and the educational system are going to react or adapt to the use of those medications.

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