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**THE USE OF RITALIN IN  
PHARMACOLOGICAL  
COGNITIVE  
IMPROVEMENT AS A  
NEW CHALLENGE IN  
THE PROTECTION OF  
PERSONALITY**

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**Abstract:** In order to present “Pharmacological Cognitive Enhancement” as the practice by which healthy adults who resort to psychostimulant drugs to increase their cognitive capacity, this article addresses methylphenidate hydrochloride - Ritalin - as the main drug used in pharmacological neuroenhancement, highlighting the fact that its long-term effects have not yet been properly demonstrated by the pharmaceutical industry. The problem will be approached from the point of view of Neuroethics and the general law of personality.

**Keywords:** Methylphenidate; Ritalin; Adult; Neuroethics; Right.

## INTRODUCTION

The 18th century, due to the emergence of the Renaissance, utilitarian, liberalist movements, etc., profoundly altered the Western social order. Until then, civil society was characterized by strong axiological foundations, so that moral and ethical models linked men in flooded, interpenetrated and communicative groups (family, craft corporations, street, church, etc.)<sup>1</sup>, that tended to use the differences between individuals in favor of their collectivity, leaving the individual to realize himself through the group.

However, the new social order, also based on the horrors of the second war and the consequent consolidation of the concepts of dignity and autonomy of the human person, gives rise to the so-called “Personality Rights”, it tries to elevate man, as an individual, to the centrality social order.

This way, between the end of the 18th and mid-sec. In the 20th century, individualism and subjectivism progressively separated man from the moral and ethical models of the time,

splitting the cohesion of groups (for example, people no longer knew their neighbors and the family crisis was evident).

Such reordering is also catalyzed by scientism and the consequent dissemination of the technique, which, despite all the fabulous technological progress carried, led people to a schizophrenic process of integration via competition, in which individuals, in order to be able to compete for social spaces are compelled to standardize their intellectual (and therefore cognitive) skills. This way, common values end up being superimposed on individual values, which, in turn, are easily degraded into mere interests, “and then into instruments of predation by one over the other”<sup>2</sup>.

However, “each human being is different from all others, and it is this diversity that enriches Humanity.”<sup>3</sup> and “each human being has the right to be different from all others and it is in this difference that social balance is built.”<sup>4</sup>

This time, contemporary man, who, in theory, is master of himself, being able, through the instrumentalization of Personality Rights, to oppose to his fellow men and to the State any constraint to his “dignity” as a human person, finds himself trapped in a web, diffuse resulting from the sum of individual wills, the “general will”, which, in turn, compels him to deny himself in the name of success, money, recognition, status... mirages of fulfillment as a human being.

Based on the context presented above, the present text seeks to address the situation of healthy adults who resort to psychostimulant drugs in order to increase their cognitive capacity and, therefore, satisfy an ideal of achievement that is imposed on them by the

1 CAMPOS. Diogo Leite de. Nós: estudos sobre o Direito das Pessoas. Almeidina. Coimbra, 2004. P. 110 – 117.

2 Ibid. p. 137.

3 CAMPOS. Diogo Leite de. Lições de Direitos da Personalidade. Almeidina. Coimbra, 1992. P. 22. *Apud.* BARBAS, Stela. Direito ao patrimônio genético. Almeidina, Coimbra, 2006. P. 18.

4 BARBAS, Stela. Ibid.

values of contemporary society, which, by In turn, it increasingly abandons the primacy of collaboration between people who are naturally distinct, and who complement each other, to play them against each other in a fight in which those who abandon themselves, deny their peculiarities and seek in all means, emerge victorious. available to become the most equal of equals.

Thus, the practice of pharmacological cognitive enhancement has been growing at an alarming rate, especially among university students, and, according to the understanding expressed here, represents a serious threat to the exercise of the right to personality development - according to their genetic heritage - through the use of medicines such as methylphenidate hydrochloride – Ritalin.

From the context presented above, the Pharmacological Cognitive Enhancement will be presented here; Methylphenidate Hydrochloride, the most commercialized psychostimulant in the world and the leading drug when it comes to neuroenhancement; and the approach of the theme under the sign of Neuroethics and Law, specifically the right to the free development of the personality, aiming, in the end, to highlight the proposed question as a “New challenge in terms of the protection of the personality”.

## PHARMACOLOGICAL COGNITIVE IMPROVEMENT

The search for ways to improve people’s ability to learn is not something new, traditionally they include:

“the ordering of the material to be studied,

5 BARROS, Denise Borges. Aprimoramento cognitivo farmacológico: Grupos focais com universitários. Rio de Janeiro: universidade do Estado do Rio de Janeiro, 2009. P. 43 a 48. Dissertação de Mestrado em Saúde Coletiva. Available on the website: <https://www.btdtd.uerj.br:8443/handle/1/4087>. Accessed on 04.07.2022

6 Ibid.

7 MOHAMED. Ahmed Dahir. *Neuroethical issues in pharmacological cognitive enhancement*. WIREs Cogn Sci 2014. doi: 10.1002/wcs.1306. Available on the website <https://wires.onlinelibrary.wiley.com/doi/full/10.1002/wcs.1306>. Acesso em 02.07.2022.

8 MAIA. Igor Fidelis. Disputas em torno da Ritalina: uma análise sobre diferentes possibilidades de um fármaco. Natal: Universidade Federal do Rio Grande do Norte, 2017.p. 83.

9 Ibid.

organization of time respecting reading time and leisure and sleep time, care with a good diet and a lot of dedication. Another device that is widely used to perform academic tasks are stimulants such as coffee and guarana powder. These substances help to keep the person awake for a longer time, favoring the disposition to work. However, this does not always improve learning performance properly.<sup>5</sup>.

The term Pharmacological Cognitive Enhancement is used to name the practice of enhancing learning in healthy and normal people by altering brain functioning through medical technology.<sup>6</sup> It is a drug intervention in healthy individuals with the sole purpose of amplifying their cognition<sup>7</sup>.

Igor Fidelis Maia, complements:

“The use of psychoactives to stimulate intellectual activities is not new, drugs such as the marijuana have been used to enhance creativity and the “expansion of ordinary consciousness”, while cocaine is also used to combat fatigue and maintain engagement in the execution of certain tasks. tasks, however drugs like these cause “escape from reality” which implies in “decreased autonomy of the body and reason”<sup>8</sup>. (...) “however, there are modalities of using psychoactives to mediate intellectual creation that are not characterized by changes in sensory perception [...] through increased concentration and focus, reduced mental fatigue, greater retention of content and motivation”. They are substances that [...] can circumvent biological processes such as tiredness, sleep, and make their users able to study for hours in a waking state”<sup>9</sup>.

These are the so-called “smart drougs”, or “pharmacological cognitive enhancers”,

a very comprehensive group of substances ranging from essential vitamins and minerals such as B vitamins, Selenium, Zinc etc; pass through amino acids and organic compounds such as creatine and taurine; micro doses of recreational drugs LSD, mushrooms, MDMA (ecstasy) etc. however, the biggest draw must go to central nervous system stimulants, such as xanthines (caffeine), nicotine, Amphetamines (Adderall®), Eugeroics (Modafinil®), Atomoxetine (Strattera®) and Methylphenidate (Ritalin®/Concerta®/Rubifen®), the most commercialized psychostimulant in the world<sup>10</sup>.

## THE METHYLPHENIDATE DEFINITIONS

Marketed under the brands Concerta®, Ritalin® and Rubifen®, methylphenidate hydrochloride is a central nervous system stimulant whose effects end up improving the level of performance “of executive functions that assist in the performance of cognitive tasks, in addition to decreasing fatigue”. It is the most consumed psychostimulant in the world (UN, 2017) and is the main drug

10 ONU. *Report of the International Narcotics Control Board for 2017*. Available on the website: [https://www.incb.org/documents/Publications/AnnualReports/AR2017/Annual\\_Report/E\\_2017\\_AR\\_ebook.pdf](https://www.incb.org/documents/Publications/AnnualReports/AR2017/Annual_Report/E_2017_AR_ebook.pdf). Accessed on 01.07.2022.

11 English speaking countries: *Attention Deficit Hyperactivity Disorder (ADHD)*, it is a “Neurodevelopmental Disorder” characterized by a “persistent pattern of inattention and/or hyperactivity-impulsivity, inappropriate in relation to the developmental stage and which significantly interferes with the individual’s functioning”, more in: BARROS, Denise Borges. Ob. Cit.

12 BARROS, Denise Borges. *Aprimoramento cognitivo farmacológico: Grupos focais com universitários*. Rio de Janeiro: University of the State of Rio de Janeiro, 2009. P. 9 and 10. Master’s Dissertation in Public Health. Available on the website: <http://livros01.livrosgratis.com.br/cp111433.pdf>. Cita: DILLER, L. The run on Ritalin: attention deficit disorder and stimulant treatment in the 1990s. *The Hastings Center Report* v. 26, no. 2 (March/April 1996). p.12-18; ELLIOTT, R et al.: Effects of methylphenidate on spatial working memory and planning in healthy young adults. *Psychopharmacology*, New York, v. 131, n. 2, may, 1997 p. 196-206; MEHTA, M. A et al.: Methylphenidate enhances working memory by modulating discrete frontal and parietal lobe regions in the human brain. *The Journal of Neuroscience*, v. 20, n. 6, march - 2002. pp. 1-6; SOLANTO, M.: Neuropsychopharmacological mechanisms of stimulant drug action in attention-deficit hyperactivity disorder: a review and integration. *Behavioural Brain Research*, n 94, 1998, pp. 127-152 & THE MTA COOPERATIVE GROUP: A 14-month randomized clinical trial of treatment strategies for Attention-Deficit/Hyperactivity Disorder. *Arch Gen Psychiatry*, v. 56, December/1999. pp. 1073-1086.

13 ONU. Ibid e CALMAN, Luciana Vieira & DOMITROVIC, Nathalia. “Geração Ritalina” e a otimização da atenção: Notas preliminares. **Oficina do CES**. Coimbra: Centro de Estudos Sociais. ISSN 2182-7966. 2017, n. 439. [sn]. Available on the website: [https://ces.uc.pt/publicacoes/oficina/ficheiros/18812\\_Oficina\\_do\\_CES\\_439.pdf](https://ces.uc.pt/publicacoes/oficina/ficheiros/18812_Oficina_do_CES_439.pdf). Accessed on 07.03.2022.

14 Ibid.

15 BRANT, Luiz Carlos and CARVALHO, Tales Renato Ferreira. Metilfenidato: medicamento gadget da contemporaneidade. *Interface (Botucatu)* [online]. 2012, vol.16, n.42, pp.623-636. Available on the website: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S1414-32832012000300004&lng=en&nrm=iso](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1414-32832012000300004&lng=en&nrm=iso). ISSN 1414-3283. Acesso em 06.06.2022.

prescribed for the treatment of Hyperactivity Disorder and/or Attention Deficit ADHD.<sup>11</sup> and Narcolepsy (a type of sleep disorder).<sup>12</sup>

The United Nations Convention on Psychotropic Substances of 1971 includes Methylphenidate Hydrochloride in the list of narcotic or psychotropic drugs, that is to say that it is subject to a medical prescription for special control, however, data from the UN itself point to a brutal increase in consumption and world production of this psychotropic drug in recent decades, for example, production in the United States went from 1.8 tonnes in 1990 to 59t in 2016 and world trade in the substance went from 920 kg to 33 t during the period 1994-2014.<sup>13</sup>

At this point, it is urged to clarify that the use of methylphenidate for the treatment of ADHD is a subject surrounded by controversies, especially regarding a plausible excess of medication and a “potential for abuse of stimulant drugs”<sup>14</sup>.

It is also important to note that despite being widely prescribed, the mechanisms of action, as well as the long-term effects are not fully elucidated.<sup>15</sup> Methylphenidate

hydrochloride is known to work by altering the 'chemistry' of the brain, more specifically:

“inhibiting the reuptake of dopamine - neurotransmitter responsible for motor control, and of noradrenaline - neurotransmitter responsible for physical, mental arousal and good mood. In this case, the drug prevents catecholamines from being recaptured by the nerve endings, so the neurotransmitters remain active longer in the synaptic space, giving the individual an increase in concentration, motor coordination and arousal.”<sup>16</sup>

On the other hand, the leaflet with information for the user of the drug Rubifen 10 mg, contraindicates its use in people with “heart problems”, “mental health problems” such as “suicidal thoughts” or “severe depression”, in addition to what is recurrent in the literature the report of the so-called “zombie effect” or zombie like, in which “the person is chemically contained within himself”<sup>17</sup>

## HISTORY

One of the procedures widely used in the chemical/pharmaceutical industry is to synthesize substances and then investigate

possible uses for them. Thus, in 1944 Dr. Leandro Panizzon, in the laboratories of the Swiss pharmaceutical company: Ciba, 'invented' methylphenidate, and this soon proved to be a powerful stimulant of the nervous system, without, however, realizing any suitability of the molecule for the treatment of specific pathology.<sup>18</sup>

This time, Ciba, currently Novartis<sup>19</sup>, initiated “an ostensible effort to discover a therapeutic application for this drug that could justify its medicinal application in terms of the physiological alteration produced”<sup>20</sup>, initially indicating it for the treatment of fatigue, especially for the elderly, later it became timidly indicated for hyperkinetic disorders, however, the lack of clarity regarding the drug's mechanisms of action weakened a possible “scientifically convincing” for your application<sup>21</sup>.

A turning point in the search for a disease for methylphenidate was the third version of the Diagnostic and Statistic Manual of Mental Disorders (DSM III), published by the American Psychiatric Association in 1980 which ushered in a new era in the understanding of mental disorders. through

16 ANDRADE LS, GOMES AP, NUNES AB, RODRIGUES NS, LEMOS O, RIGUEIRAS PO, NEVES RR, SOARES WFS, FARIAS LR. *Ritalina uma droga que ameaça a inteligência. Revista de Medicina e Saúde de Brasília.* ISSN 2238-5339. Available on the website: <https://portalrevistas.ucb.br/index.php/rmsbr/article/download/8810/5727>. Acesso em 10.06.2022.

17 ANDRADE LS, GOMES AP, NUNES AB, RODRIGUES NS, LEMOS O, RIGUEIRAS PO, NEVES RR, SOARES WFS, FARIAS LR. *Ritalina uma droga que ameaça a inteligência. Revista de Medicina e Saúde de Brasília.* ISSN 2238-5339. Available on the website: <https://portalrevistas.ucb.br/index.php/rmsbr/article/download/8810/5727>. Acesso em 10.06.2022.

18 Ibid.

19 A Novartis foi criada em 1996 através da fusão da Ciba-Geigy e da Sandoz. Mais em <https://www.novartis.com.br/sobre-novartis/nossa-historia>. Acesso em 01.07.2022.

20 BRANT, Luiz Carlos and CARVALHO, Tales Renato Ferreira. Metilfenidato: medicamento gadget da contemporaneidade. Interface (Botucatu) [online]. 2012, vol.16, n.42, pp.623-636. Available on the website: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S1414-32832012000300004&lng=en&nrm=iso](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1414-32832012000300004&lng=en&nrm=iso). ISSN 1414-3283. Accessed on 06/06/2022. Cita: ORTEGA, F, VIDAL, F. Mapeamento do sujeito cerebral na cultura contemporânea.

RECIIS, Rio de Janeiro, v. 1, n. 2, 2007. p. 257-261. Available on the website: <<http://www.reciis.cict.fiocruz.br/index.php/reciis/article/view/90>>. Acesso em 03.07.2022.

21 BRANT, Luiz Carlos and CARVALHO, Tales Renato Ferreira. Metilfenidato: medicamento gadget da contemporaneidade. Interface (Botucatu) [online]. 2012, vol.16, n.42, pp.623-636. Available on the website: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S1414-32832012000300004&lng=en&nrm=iso](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1414-32832012000300004&lng=en&nrm=iso). ISSN 1414-3283. Accessed on 06/06/2022. Cita: ORTEGA, F, VIDAL, F. Mapeamento do sujeito cerebral na cultura contemporânea. RECIIS, Rio de Janeiro, v. 1, n. 2, 2007. p. 257-261. Available on the website: <<http://www.reciis.cict.fiocruz.br/index.php/reciis/article/view/90>>. Accessed: February 2008.

a “radical shift in psychiatric classification”<sup>22</sup>, revolutionized the diagnosis of ADHD due to the “transformation in the definition and description of the [ADHD] condition resulted in two consequences. The first was the possibility of differentiating this disorder from others that also presented motor agitation, such as cases of autism and anxiety. The second, [...], was the inclusion in this diagnosis of children and adults who appeared to be calm, but who had difficulty keeping their attention focused on the tasks. With the expanded target audience, the pharmaceutical industry increased its interest in this diagnosis. [...] from that point on, ADHD [ADHD] and Ritalin® became virtually inseparable, the detection of the former leading to the indication of the latter.”<sup>23</sup>

## THE DIAGNOSIS FOR ADHD

As already mentioned, the therapeutic use of methylphenidate is restricted to people with ADHD, however, the means of diagnosis and the definition of the disease are not consensual among professionals and scholars, giving rise to undue influences on diagnosis and therapy due to moral or political factors.

This way, contemporary social order compels individuals to an illogical process of

integration via competition, in which people are constrained to self-denial via processes that standardize their (intellectual, and therefore cognitive) capabilities, all in the name of “success”, “money”, “recognition”, “status” ... mirages of accomplishment as a human being.

At this point, it is urged to clarify that the diagnosis of ADHD is “essentially clinical, based on the deliberate presentation of behavioral symptoms in the Diagnostic and Statistical Manual (DSM IV) published by the American Pediatric Association”. (AAP)”<sup>24</sup> and that “a patient may be diagnosed with the disorder even if neurological examinations, neuroimaging, and/or neuropsychological tests have shown no changes”<sup>25</sup>, therefore, a Brazilian study revealed that “27% of the professionals interviewed perform the diagnosis in a consultation, in a period of time of 20-40 minutes”<sup>26</sup>.

That said, it is necessary to consider the existence of “false positive” diagnoses via the patient’s simulation of symptoms according to the DSM IV, combined with the growing tendency of physicians to popularize the use of methylphenidate hydrochloride as a first-line treatment for ADHD.<sup>27</sup>

22 RUSSO, Jane; VENANCIO, Ana Teresa A. Classificando as pessoas e suas perturbações: a “revolução terminológica” do DSM III. Rev. latinoam. psicopatol. fundam, São Paulo, v. 9, n. 3, p. 460-483, Sept. 2006. Available from <[http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S1415-47142006000300007&lng=en&nrm=iso](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1415-47142006000300007&lng=en&nrm=iso)>. access on 03.07.2022. <http://dx.doi.org/10.1590/1415-47142006003007>.

23 BARROS, Denise Borges. Pharmacological cognitive enhancement: Focus groups with university students. Rio de Janeiro: University of the State of Rio de Janeiro, 2009. P. 31. Master’s Dissertation in Public Health. Available on the website: <http://livros01.livrosgratis.com.br/cp111433.pdf>. P. 46.

24 ANDRADE LS, GOMES AP, NUNES AB, RODRIGUES NS, LEMOS O, RIGUEIRAS PO, NEVES RR, SOARES WFS, FARIAS LR. *Ritalina uma droga que ameaça a inteligência*. **Revista de Medicina e Saúde de Brasília**. ISSN 2238-5339. Available on the website: <https://portalrevistas.ucb.br/index.php/rmsbr/article/download/8810/5727>. Accessed on 06.10.2022.

25 Ibid.

26 Ibid.

27 In this sense, Denise Barros warns: “the current epidemic picture of ADHD [ADHD] indicates a pathologization of child behavior and can be understood, in some cases, as a disguised expression of the practice of cognitive enhancement. When parents realize that children who use methylphenidate (indicated to treat people with ADHD) are more focused and study better, they understand that this medication can help their child’s education, regardless of whether their child does not have all the symptoms of the disorder (HYMAN, 2002).” More in BARROS, Denise Borges. Pharmacological cognitive enhancement: Focus groups with university students. Rio de Janeiro: University of the State of Rio de Janeiro, 2009. P. 31. Master’s Dissertation in Public Health. Available on the website: <http://livros01.livrosgratis.com.br/cp111433.pdf>.



“The issue of cognitive enhancement, cognitive enhancement through drugs, has been the main concern of a field of research called Neuroethics. As an offshoot of Bioethics, the field of Neuroethics is justified by the concern of the new ethical questions that arise from brain imaging research, and other types of interventions in the brain, as well as their clinical consequences”<sup>33</sup>

This way, Neuroethics, as an outstanding field of study of Bioethics, arises from the analysis of the issue of pharmacological improvement by bioethicists, therefore, the neophyte field of knowledge develops in symbiosis with the discussion of the use of drugs by healthy people. aiming to improve their cognitive abilities.

That said, Itaborahy clarifies that:

“since 2004, we have found articles by leading authors in the field of Neuroethics discussing the use of drugs for enhancement purposes and their ethical implications. But it was in December 2008 that an article in the form of a manifesto, signed by the main names and founders of Neuroethics, such as Marta Farah, (Greely et. al., 2008), generated the biggest controversies regarding the use of medicines without prescription. medical practice and the freedom of personal choice that involves such practice. This article had repercussions in the press around the world, including the Brazilian press.”<sup>34</sup>

The aforementioned text was published in the journal Nature and its title can be translated as “towards the responsible use of drugs for cognitive enhancement”, the authors point out a strong trend towards the growth of the practice of cognitive enhancement,

“especially among university students and military”<sup>35</sup>.

Based on the fact that the practice is consolidated in countries such as the United States, Canada and the United Kingdom and with expressive, and worrying, growth in Europe and in developing countries such as Brazil, the authors claim that there is an urgent need to demystify the theme, taking it out of obscurity, to promote enlightened debate, enabling adequate research and more advanced regulations<sup>36</sup>.

According to scholars, after overcoming the initial stigma imposed on the subject by the natural fear of the unknown, it is necessary to move forward with the discussion of the liberalization of the practice with a view to enhancing its benefits and managing the respective risks.<sup>37</sup>

The starting point for the destigmatization of the term ‘enhancement’ is the deconstruction of the discourse that the search for cognitive improvement must not be accepted because it is not something “natural” to human beings, it is a dishonest practice and, also, of a form of drug abuse<sup>38</sup>.

To this end, the authors argue that the use of artificial instruments aimed at improving the cognitive abilities of individuals is a much older practice than it may seem at first, as it begins with the development and improvement of tools for compressing reality, as well as retaining and knowledge transmission ranging from language development, through writing, through the press and, currently, on the internet, in

33 ITABORAHY. Cláudia. *A Ritalina no Brasil: uma década de produção, divulgação e consumo*. Rio de Janeiro: universidade do Estado do Rio de Janeiro, 2009. P. 57. Available on the website: <http://livros01.livrosgratis.com.br/cp104785.pdf>. Accessed on 09.05.2022.

34 Ibid.

35 GREELY, H., CAMPBELL, P., SAHAKIAN, B., HARRIS, J., KESSLER, R., GAZZANIGA, M., & FARAH, M. J. (2008). Towards responsible use of cognitive-enhancing drugs by the healthy. *Nature*, 2008. Available on the website [https://repository.upenn.edu/cgi/viewcontent.cgi?article=1039&context=neuroethics\\_pubs](https://repository.upenn.edu/cgi/viewcontent.cgi?article=1039&context=neuroethics_pubs). Accessed on 05.18.2022.

36 Ibid.

37 Ibid.

38 Ibid.



addition, improvements in physical exercises, nutrition, sleep management, etc. are also in the interest of achieving greater cognitive efficiency<sup>39</sup>.

Another taboo to be overcome, according to the authors, is the common judgment that brings the practice of cognitive enhancement closer to sports doping, that is, to the notion of cheating, dishonesty or fraud, especially in view of the high level of competitiveness to which people are subjected by contemporary society. To this end, the authors claim that doping is not constituted by the use of drugs per se, but by the violation of the established rule and that many of these rules find their reason for being in a contestable social ideal of: *no pain, no gain*<sup>40</sup>.

A third point to be exposed, according to the study in testilha, is the use of psychotropic drugs as drug abuse, this way the authors remind that the regulation on the use of drugs - ranging from coffee, through cigarettes, alcohol, medicines and arrive at cocaine - it must be done objectively, with potential risk attested by scientific research, that the simple speech cannot remove the need to regulate the issue which, in turn, is no longer a probability, but a fact<sup>41</sup>.

This way, the aforementioned text argues that mentally capable adults have the right to seek cognitive improvement using drugs such as methylphenidate and the State must promote such freedom through policies that must be guided by three core issues: security, freedom of choice and equality of access.<sup>42</sup>

With regard to safety, the authors break it down into three essential points: methods and experiment time to attest to efficacy and identify side effects of the drugs to be used;

39 Ibid.

40 Ibid.

41 Ibid.

42 Ibid.

43 Ibid.

44 Ibid.

45 Ibid.

from the results of a rigorous study, the risks and benefits of using a particular drug for improvement purposes are considered, which, by the way, must be guided by criteria different from those used when performing a similar analysis regarding to the treatment of illness; Finally, it is necessary to seek greater knowledge about the mechanisms of brain functioning, especially the physiology linked to brain chemistry, knowledge that is still scarce.<sup>43</sup>.

In the field of freedom of choice, the authors present a worrying social risk linked to the practice, currently ignored, but which must be addressed head-on when discussing the regulation of cognitive enhancement, it is the possibility of people being directly coerced into practice by hierarchical superiors in the work environment, as is already recurrent in several armed forces, due to the notable increase in the level of concentration and readiness provided by certain psychostimulants, the alert also extends to the possibility of indirect coercion, more common, and difficult to control, through demand for results by teachers and employers that would hardly be achieved by other means, all in full consonance with the highly competitive and demanding contemporary society<sup>44</sup>.

The last aspect distinguished by scholars concerns equal access to drugs, the regulation of neuroenhancement must be based on the democratization of practice, with the aim of distributing opportunities and the consequent achievement of social justice<sup>45</sup>.

## THE RIGHTS OF PERSONALITY

For Rabindranath Capelo de Sousa, despite the roots of the general guardianship of the

personality, they go back to the Greek hubris<sup>46</sup> and to the *actio iniuriarum romana*<sup>47</sup>, it is about “a relatively recent historical-juridical precipitate”, because only after the sec. In the 18th century, man was recognized “as the origin and foundation of the social order and no longer as a mere recipient, framed by a heteronomous order.”<sup>48</sup>

From this movement, the concepts of dignity and autonomy of the human person were built, soon led to the centrality of the legal systems, enabling the recognition of the “human personality in its globality and unity, as a judicial good, and the subjectivation of the related legal powers (...) enforceable against individuals than against the State”<sup>49</sup>.

Diogo Leite de Campos part of a genre identified as “personal rights” to decompose it into two distinct classes of personality rights: the rights of social collaboration and the rights of exclusion<sup>50</sup>.

Regarding the first, the so-called rights of the personality in a broad sense, Leite de Campos starts from the notion of the person as a “pole of social collaboration”, to conclude that these encompass “the person’s inter-relationship activity, the social dimension, the person-being-social”<sup>51</sup>.

The “person as a space of exclusion”, classified by the author as personality rights in the strict sense, concerns “the person as a space of exclusion because it is an essential presupposition of his existence, the harmful non-interference of others in what he is: in his life, in your physical structure, in your mind, in your creative capacity, etc.”<sup>52</sup>. This is the class on which it is important to discuss

in order to achieve the present object under study.

This way, the legal systems tried to shape in their texts, namely in the constitutional text, the specific protection of a series of “elements, potentialities, and expressions” of the human personality and of the “psycho-physical-socio-environmental unit of that same human personality.”<sup>53</sup>, such rights expressly listed in the legal texts are classified as special personality rights.

However, “in view of the multiplicity of real life and the complexity of human behavior”, the human personality was elevated to the condition of “general clause”, aiming to give it a flexible and versatile legal protection aimed at protecting the personality even in situations “new and complex” not provided for in the special personality rights.<sup>54</sup>

Thus, the so-called ‘General Personality Law’, enshrines the ‘non-exhaustiveness’ of personality rights, so that holders are given the power to demand respect for their physical and moral integrity from all non-holders.

## THE RIGHT TO FREE PERSONALITY DEVELOPMENT

Felipe Arandy Miranda, starts from the doctrine of the protection of the personality mentioned above to evidence the so-called “Right to the free development of the personality”, for that he makes use of the dynamic concept arising from psychoanalysis to present the personality as being “the development of being and of ‘coming -to-be’, as well as the way the individual shows himself

46 CAPELO DE SOUSA, Rabindranath. *O Direito Geral de Personalidade*, Coimbra Editora, 1995. P. 41

47 Ibid. P. 47.

48 Ibid. P. 91.

49 CAPELO DE SOUSA, Rabindranath. *O Direito Geral de Personalidade*, Coimbra Editora, 1995. P. 92.

50 CAMPOS. Diogo Leite de. *Nós: estudos sobre o Direito das Pessoas*. Almeida. Coimbra, 2004. P. 15.

51 Ibid.

52 Ibid.

53 CAPELO DE SOUSA, Rabindranath.ob. cit. P. 93.

54 Ibid.

and is perceived by others.”<sup>55</sup>

The same goes on defending the “development of their personality in a free and autonomous way”, as a direct and logical derivation of the principle of human dignity, as a necessary protection to guarantee “that the person develops based on subjective criteria, and not on objective criteria forced by another (...) contained in the list of freedom rights and emanates a positive content, in the freedom to act, and a negative content, in the non-interference or impediments”<sup>56</sup>.

### **THE RIGHT TO THE FREE DEVELOPMENT OF THE PERSONALITY FROM THE GENETIC HERITAGE**

Stela Barbás, after noting the complexity inherent to the theme, he advances the concept of genetic heritage as an essential component of the identity of individuals, being, in his words:

“the universe of physical, psychic and cultural components that start in the remote ancestor, remain constant although with natural mutations over generations, and that, in conjunction with environmental factors and in a permanent process of interaction, come to constitute our own identity and that, therefore, we have the right to keep and transmit.”<sup>57</sup>

The author goes on to argue that “the right that everyone must have to preserve and see their unity and integrity in the bio-psychic field cannot be disturbed.” And that “each

individual must be able to independently determine their conduct and give expression to their vocation and creative capacity according to the dictates of their own reason, their feelings.”<sup>58</sup>

The author goes on to address the concept of “biotypology”, coined by Nicola Pente, to assert, based on the teachings of Diogo Leite de Campos, that diversity, based on the uniqueness of each individual, is an essential part of achieving social balance.<sup>59</sup>

### **PERSONALITY PROTECTION AND PHARMACOLOGICAL COGNITIVE ENHANCEMENT**

Putting the problem, notable the lesson of Diogo Leite de Campos, for whom the right to physical and psychological integrity of people “is never [is] entirely available to the holder of this right” because: “each human being can only dispose of his body and his spirit to the extent necessary for his humanization. Although he is the one to choose the path to follow, there are limits that cannot be crossed. [...] Each one will choose their cultural, technical or scientific training; but he will not engage in dangerous experiments for himself and his fellow man.”<sup>60</sup>

Furthermore, it is urged to highlight all the complexity and controversy that permeates the theme discussed here are nourished by its intersection with the “traditional conceptions of identity, self, freedom, responsibility and free will.”<sup>61</sup>.

55 MIRANDA, Felipe Arady. *O Direito Fundamental ao Livre Desenvolvimento da Personalidade*. Revista do Instituto do Direito Brasileiro. Lisboa: Faculdade de Direito da Universidade de Lisboa. ISSN: 2182-7567 2013, number: 2 (2013), nº 10. P. 11176. Available on the website: [http://cidp.pt/publicacoes/revistas/ridb/2013/04/2013\\_10\\_00000\\_Capa.pdf](http://cidp.pt/publicacoes/revistas/ridb/2013/04/2013_10_00000_Capa.pdf) . Accessed on 03.06.2022.

56 JORGE MIRANDA, *Manual de Direito Constitucional: Direitos Fundamentais*, tomo IV, 4.ª edição, Coimbra Editora, 2008, pág. 91. Apud. MIRANDA, Felipe Arady. op. cit.

57 BARBAS, Stela. *Direito ao patrimônio genético*. Almeida, Coimbra, 2006. P. 17.

58 BARBAS, Stela. Op. cit. P. 19.

59 Op. cit. P. 18 e 19.

60 CAMPOS. Diogo Leite de. *Lições de Direitos da Personalidade*. Coimbra, 1992. P. 71.

61 BARROS, Denise Borges. *Pharmacological cognitive enhancement: Focus groups with university students*. Rio de Janeiro: University of the State of Rio de Janeiro, 2009. P. 13. Master's Dissertation in Public Health. Available in: <http://livros01>.

## CONCLUSION

As broad as the importance of the matters discussed here is their scope, therefore, it is inevitable that there are numerous unexplored aspects, but, within the proposed limits, it has been shown that the brutal growth of the practice of pharmacological cognitive enhancement, via Methylphenidate Hydrochloride, configures a new challenge in the protection of personality.

This way, the present article tried to present the proposed question through a multidisciplinary approach, demonstrating that the theme worked here can only be fully understood through cross-sectional investigation that permeates the health and social sciences.

We tried to demonstrate that healthy adults are compelled by a highly competitive society to seek all available means to fit the expectations of the labor market, respond to the demand to be “successful” at the cost of the freedom to build themselves as an individual, giving up the innate right to the free development of their personality according to their genetic heritage.

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