



Representations of science and technology in Brazilian anarchism:

José Oiticica and Maria Lacerda de Moura

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Abstract

This article aims at analyzing the representations of science and technology present in works by some Brazilian anarchist thinkers in the first decades of the 20th century. A tension between adoption or rejection of deterministic views on science, between enthusiasm with and critical distrust of progress, as well as an exaltation of the technical and collaborative ability of workers were present in classic anarchism writings. We intend to show how conflicting representations of science and technology were expressed in a plural way in texts of libertarian trend within the context of conservative modernization in Brazilian Old Republic. These representations include the proposal of an anarchist social energetics by José Oiticica, and the strong criticism to “bourgeois science” and technology by Maria Lacerda de Moura.

Keywords

Representations of science and technology; Anarchism; Brazil; 20th century; José Oiticica; Maria Lacerda de Moura

Representações de ciência e tecnologia no anarquismo brasileiro:

José Oiticica e Maria Lacerda de Moura

Resumo

Este artigo objetiva analisar as representações de ciência e tecnologia presentes nas obras de alguns pensadores anarquistas brasileiros nas primeiras décadas do século XX. A tensão entre a adoção e a rejeição de visões deterministas sobre a ciência, o entusiasmo e a desconfiança crítica do progresso, e a exaltação da capacidade técnica e colaborativa dos trabalhadores eram presentes nas obras anarquistas clássicas. Pretendemos mostrar como representações conflitantes de ciência e tecnologia eram foram expressas de maneira pluralista em textos de tendência libertária no contexto de modernização conservadora na República Velha brasileira. Essas representações incluem a proposta de uma energética social anarquista, por José Oiticica, e a forte crítica à “ciência burguesa” e à tecnologia, por Maria Lacerda de Moura.

Palavras-chave

Representações de ciência e tecnologia; Anarquismo; Brasil; Século XX; José Oiticica; Maria Lacerda de Moura

Representations of science and technology in Brazilian anarchism:**José Oiticica and Maria Lacerda de Moura****Introduction**

The aim of this paper is to analyze the representations of science and technology present in the works by some Brazilian anarchist thinkers in the first decades of the 20th century. Our goal is to analyze counter-narratives or narratives of resistance to the hegemonic scientific and technological narratives, namely those that seek to “resist or reimagine technological change and seek to ground identity not on machines, but on other cultural artifacts or values”¹. We will point out some anarchist narratives of resistance written in the period between 1900 and 1935.

The tension between the adoption or rejection of deterministic views on science, the enthusiasm with or the critical distrust of progress, and the exaltation of the technical and collaborative ability of workers were present in anarchism classic works such as Proudhon’s *Philosophy of Misery*,² Kropotkin’s *Modern Science and Anarchism* and *Fields, Factories, Workshops*,³⁴ or even Tolstoi’s *Modern Science*.⁵ We intend to show how conflicting representations of science and technology were expressed in a plural manner in texts of libertarian trend within the context of conservative modernization in Brazil Old Republic. These representations include the proposal of an anarchist social energeticism by José Oiticica, and the strong criticism to “bourgeois science” and technology in the book *Civilização: Tronco de Escravos* [Civilization: Trunk of Slaves] (1931) by Maria Lacerda de Moura.⁶

We will also take into account the remarks by Álvaro Sierra concerning the importance of a social history of the appropriation of scientific and technological knowledge, which attempts to look at the processes and channels of penetration and transformation of this knowledge in the popular classes.⁷ This social history of science and technology has the plurality of the “political culture of the popular classes” as premise, therefore, it does not intend to achieve standardized interpretations, but pays attention to the specificities of political subcultures, such as anarchism, seeking to understand in their full complexity the eventual distinctions between the elites of a movement and the everyday manifestations of workers over the analyzed issues, for example, in the libertarian workers’ press.⁸ At the same time, regarding anarchist thought, we are interested in understanding the “intellectual and political implications of certain scientific concepts as they emerged in a zone between the specific concerns of the natural sciences and broader questions of

¹ David Nye, *America as Second Creation: Technology and Narratives of New Beginnings* (Cambridge [Ma]: MIT Press, 2003), 14.

² Pierre-Joseph Proudhon, *System of Economical Contradictions or, The Philosophy of Misery* (Benjamin Tucker: Boston, 1888).

³ Peter Kropotkin, *Modern Science and Anarchism* (New York: Mother Earth, 1908).

⁴ Peter Kropotkin, *Fields, Factories and Workshops* (London: G. P. Putnam’s Sons, 1913).

⁵ Liev Tolstoi, “Ciência Moderna,” in *Os Últimos Dias* (São Paulo: Companhia das Letras, 2011), 124-34.

⁶ Maria Lacerda de Moura, *Civilização: Tronco de Escravos* (Rio de Janeiro: Civilização Brasileira, 1931).

⁷ Alvaro Girón Sierra, “Darwinismo, Darwinismo social e izquierda política (1859-1914): Reflexiones de carácter general,” in *Darwinismo social y eugenesia en el mundo latino* (Buenos Aires: Siglo XXI, 2005), 23-58.

⁸ *Ibid.*

social and political significance”⁹. This is the case of the use of the concepts of energy and work by José de Oiticica, and the criticism of endocrinological experiments by Maria Lacerda de Moura.

Science and technology in classical anarchist thinkers

We will try to understand anarchist thinking in its contradictions, ambivalences and ambiguities as present in its social practices, in its reflection on science and technology and in its elaboration of narratives of resistance.¹⁰ These contradictions were expressed, for instance, in the texts by Pierre-Joseph Proudhon, the first thinker to define himself as anarchist. In his book *Philosophy of Misery*, originally published in 1846, he first states that the “machine is the symbol of human liberty, the sign of our domination over nature, the attribute of our power”¹¹, to immediately reflect on the multiple effects of “the ruinous influence of machinery on social economy and the condition of laborers”, as e.g. the reduction of wages, displacement of labor, “degeneration of the race”, diseases and even death, among others.¹² Proudhon is aware of this contradiction characteristic of his antinomic thought: “machinery, like the division of labor, in the present system of social economy is at once a source of wealth and a permanent and fatal cause of misery”¹³.

These evident contradictions led authors, such as Uri Gordon, to argue that anarchist literature, whilst superficially criticizing the effects of technology, for example, in the world of labor, tended not to question the “Western cultural ethos of progress”, but continued to see the scientific and technological development under a “strongly positive light, as an expression of the triumph of human creativity and ingenuity over an essentially hostile natural world”¹⁴.

Although we do not deny this tendency in anarchist thought, we would like to emphasize the complexity of anarchist reflection about science and technology. Proudhon himself had an original perspective over the issue of progress. In his book *The Philosophy of Progress*, he denied the hegemonic view concerning progress, namely one that is based on the emphasis of its material and utilitarian side, on the accumulation of wealth and the multiplication of discoveries, on the access of a “greater number of men to the pleasures of fortune”¹⁵. Still, he compared this concept – absolutizing, in his view – to a view of progress as constant transformation, an anti-doctrinal universal movement. Proudhon also notes with extraordinary sagacity the mechanisms of social control present in technology, when he affirms that with “machinery and the workshop, divine right – that is, the principle of authority – makes its entrance into political economy.”¹⁶

⁹ Anson Rabinbach, *The Human Motor: Energy, Fatigue and the Origins of Modernity* (Berkeley: University of California Press, 1992), 13.

¹⁰ For a history of ideas of and the anarchist movement, see: George Woodcock, *História das Idéias e Movimentos Anarquistas: A Ideia* (Porto Alegre: L&PM, 1983).

¹¹ Proudhon, *System of Economical Contradictions*, 178.

¹² Ibid, 196.

¹³ Ibid, 187.

¹⁴ Uri Gordon, “Anarchism and the Politics of Technology Working USA,” *The Journal of Labor and Society*, 12 (2009): 489–503.

¹⁵ Pierre-Joseph Proudhon, *The Philosophy of Progress*. (1853) available at: http://www.proudhonlibrary.org/index.php?title=The_Philosophy_of_Progress

¹⁶ All translations from Portuguese into English were made by this author.

Therefore, in Proudhon's reflection over machinery or progress, in Peter Kropotkin's reflection on the fusion of industry and field, or still in the sharp criticism by Maria Lacerda de Moura to science and technology at the service of capital, we may highlight - close to the sense pointed out by Charles Thorpe and Ian Welsh ¹⁸ the original interweaving of the views on science and technology of anarchism with concepts such as decentralization, anti-authoritarianism, plurality, and social role.

Anarchist thought, according to Sierra, reinforces these antinomies and originalities due to its "militant scientism and the central role that its conception of nature occupied in its doctrinal body"¹⁹. The word nature admitted various meanings in anarchist understanding, thus designating,

"[...] in the first place, a utopian counter-world characterized by everything that was supposed not to exist in contemporary society: justice, harmony, and freedom. 'Natural', from this point of view [was] opposed to 'artificial': the prevailing social order appeared as a mere useless shell that - pathologically - covered a more deeply underlying order. On the other hand, natural was equivalent to 'firstborn', 'primitive', 'previous', revolution had as its ultimate mission the coming back, in the act of governing itself of - natural - laws that had been observed in a previous earlier time [...] nature would also be a fruitful mother who provides her children with all that is necessary."²⁰

These views, foundational for anarchist thought, led a good part of its militants to believe in the emancipatory nature of science, for it was a rational manner to fight against religious myths, and also to understand and transform the natural and the social reality. In addition, according to Robyn Roslak, in 19th century Europe "the use of science by political radicals to justify and understand the mechanisms of social relationships and to create new patterns of social harmony"²¹ was common. These ideas also led to creative and simultaneously contradictory appropriations by many anarchists, including Brazilian ones, of scientific tendencies such as Darwinism, Neo-Malthusianism and eugenics.

Among classic anarchists, Kropotkin might be best represent these creative contradictions over modern science, when he leads anarchism to a conciliatory view with contemporary science by means of the notion of scientific anarchism:

"Anarchism is a world-concept based upon a mechanical explanation of all phenomena, embracing the whole of Nature - that is, including in it the life of human societies and their economic, political, and moral problems. Its method of investigation is that of the exact natural sciences, by which every scientific conclusion

¹⁷ Proudhon, *System of Economical Contradictions*, 179.

¹⁸ Charles Thorpe, & Ian Welsh, "Beyond Primitivism: Toward a Twenty-First Century Anarchist Theory and Praxis for Science," *Anarchist Studies*, 16, n°1 (2008): 48-75

¹⁹ Alvaro Girón Sierra, "Evolucionismo y anarquismo: la incorporación del vocabulario y los conceptos del evolucionismo biológico em el anarquismo español (1882-1914)," (PhD thesis, Universidad Complutense, 1996), 1.

²⁰ Ibid.

²¹ Robyn S. Roslak, "The Politics of Aesthetic Harmony: Neo-Impressionism, Science, and Anarchism," *The Art Bulletin*, 73, n°3 (1991): 381-390, on 384.

must be verified. Its aim is to construct a synthetic philosophy comprehending in one generalization all the phenomena of Nature - and therefore also the life of societies.”²²

However, this idea was simultaneously supported by a view of anarchism originating in social struggles, creativity, and social diversity. According to Kropotkin, when facing the social or a natural phenomenon, an anarchist asks about the forms of social life that might allow “this amount of happiness to grow and to develop, quantitatively as well as qualitatively, that is, to become more complete and more varied”²³.

With Kropotkin we are able to understand the antinomic logic of anarchist thought, since this author performs creative displacements when he worships science. These displacements, based on the critical thought of the social movements of his time, enable him to propose new concepts, such as integral education and evolution by means of mutual aid, or even to glimpse at the radical democratization of scientific knowledge and its production in an anarchist-communist society.

Representations of science and technology in Brazilian libertarian texts

The critical thought about science and technology present in the works by the main anarchist authors since the second half of the 19th century was appropriated and reframed by their Brazilian fellows during the first decades of the 20th century.²⁴ We intend to show in this section in a preliminary way some possibilities offered by the narratives of resistance on science and technology present in the texts by some anarchist authors of this period, such as José Oiticica and Maria Lacerda de Moura.

José Oiticica and feminine energy

Between 1914 and 1915, anarchist militant José Oiticica,²⁵ published a series of articles in magazine *A Vida* [Life] on *The Waste of Feminine Energy*. His first article begins in an apparently unexpected way:

“Two principles rule over the universe: the first one is conservation of energy, [which was] discovered by Mayer; the second is the decrease of the potential thermal generation of motion, discovered by Carnot [and] generalized by William Thompson, whose final consequence is the law of degradation of energy. I cannot go here into the appraisal of these principles, which revolutionized all modern science, revealing to the wise men unforeseen perspectives, revolving around philosophical lucubrations - all

²² Kropotkin, *Modern Science and Anarchism*, 54.

²³ *Ibid*, 58.

²⁴ For a history of anarchism in Brazilian “Old Republic”, see: Sheldon Leslie Maram, *Anarquistas, Imigrantes e o Movimento Operário Brasileiro (1890-1920)* (São Paulo: Paz e Terra, 1979); Edilene Toledo, “A Trajetória Anarquista no Brasil da Primeira República,” in *As Esquerdas no Brasil: A Formação das Tradições (1889-1945)*, ed. Jorge Ferreira, & Daniel Araújo Reis (Rio de Janeiro: Civilização Brasileira, 2007), 53-87; Cristina Hebling Campos, *O Sonbar Libertário* (Campinas: Unicamp, 1988).

²⁵ On José Oiticica, see: Antonio Arnoni Prado, *Trincheira, Palco e Letras* (São Paulo: Cosac & Naify, 2004), 143-72. See also: Renato Lauris Junior, “José Oiticica: Reflexões e Vivências de Um Anarquista,” (Master dissertation, Unesp, 2009), and T. Ventura, *Nem Barbárie, Nem Civilização!* (São Paulo; Annablume, 2006).

traditional ashes of metaphysics, annihilating the already triumphant mechanism [...] The world is energy.”²⁶

This apparent incongruence reveals a series of processes of resignification present in libertarian thought and in the social movements of that time. As stated above, it indicates first the antinomic approximations of anarchism to science, and on the other hand, the process of creation of narratives of resistance marked by a creative dialogue between the social and discursive practices and the hegemonic scientific discourses of this period.

Oiticica’s reflection may be considered pertinent to a metaphor recurrent among the social reformers of the period, namely the human motor. According to Anson Rabinbach, through it,

“[...] scientists and social reformers could articulate their passionate materialism embracing nature, industry and human activity in a single, overarching concept, labor power [...] the protean force of nature, the productive power of industrial machines, and the body in motion were all instances of the same dynamic laws subject to measurement The metaphor of the human motor translated revolutionary scientific discoveries about physical nature into a new vision of social modernity.”²⁷

Rabinbach argues that the metaphor of the human motor as a place for conservation and conversion of energy was appropriated by liberalism, specially through political economy, but also by “many utopian social and political ideologies of the early twentieth century”, which saw the workman as a productive machine and a political instrument of social transformation that could resist fatigue if taken by an real conscience.²⁸ In this way, Bolshevism, Fascism and, as we shall see, also Oiticica’s anarchism shared in different degrees the idea of human society as having an endless ability to produce, but that was hindered by energetic waste arising from the unfair gears of capitalist society.²⁹

Oiticica is closely in touch with this idea when he describes his views on human beings and life, and he questions:

“What is a man in society? Another aggregate of unstable energies. This instability is kept in him by the metamorphosis of the chemical energies assimilated by the aggregate into mechanical or heating energies removed from him. This special metamorphosis, which takes place in the opposite direction from the one of plants, in which chemical energy storage merges again at the expense of solar heat, this metamorphosis is *life*.”

²⁶ José Oiticica, “O Desperdício da Energia Feminina,” *A Vida: periódico anarquista*, nº 1, edição fac-similar (São Paulo: Icone, 1988), 4

²⁷ Rabinbach, 1.

²⁸ Ibid, 4

²⁹ Roslak, in 385, discusses the constancy of chemical metaphors in anarchist thought, for example, in Jean Grave and Kropotkin. He stresses, however, that regardless of the chosen scientific metaphor, the constant element was that the “anarchist vision of perfect social harmony was perceived as ‘natural’ because it was already immanent in nature itself, and the condition of harmony in nature emerged as the result of the natural, chemical affinities that existed between individualized units of matter”.

Life is but the maintenance of an energetic quantum in a definite organism”.³⁰

This definition of life acquired greater meaning as a function of its context, namely, the first issue of an anarchist magazine bearing the same name, as if this journal would be a symbolic call to reorganize the unbalanced energetic forces of society.

The approximation of Oiticica’s thought to reformist trends in European thought on social energeticism, besides the incorporation of the metaphors of life as energy and of work as a “quantum of organic energy spent by the individual”, is directly evident in his appeal to Wilhelm Ostwald and in his sociological energetics: “Energetics will thus illuminate and simplify sociology. By applying it to all problems of sociology and morality, I think I may have fulfilled Ostwald’s wish, when he offered to sociologists an introduction to the study of the phenomena of their expertise”³¹.

According to Rabinbach, Ostwald was a famous chemist and writer, responsible for the diffusion of sociological energetics in Germany, and who asserted the importance of the energy doctrine for the human sciences. To Ostwald, not one single area of human existence could remain untouched by the laws of energy, whereas the main goal of society was to convert dissipated energy into socially available energy.³² In this way, progress would be measured by the “efficiency of energy conversion” and by the coordination of human energy to minimize losses.³³

Along this same line of thought, Oiticica stated that the perfect social organization was “the one in which human energy evolves as much as possible, thus contributing to the complete satisfaction of the needs of all”³⁴. According to him, human energy was the set of “physical, intellectual, moral, practical, and social energies”. These energies were wasted in the contemporary social organization due to the characteristics of capitalism, where a minority took over the fruits of collective work as a function of the unequal division of work between workers and parasite bourgeoisie. Therefore, Oiticica states that modern society, “based on the excess of work of some, the unproductive work of others, and the non-work of many, is detrimental to the physical development of many”³⁵. Thus, Oiticica, together with other social reformers from the beginning of the century, feared that “the energy of mind and body dissipates under the strain of modernity”³⁶, and proposed a new model of modernity based on the conservation and full use of energy, which could only be possible in an anarchist society.

The waste of energy resulting from the working conditions of women was specially emphasized by Oiticica in this set of articles. Women underwent excessive physical work leading to irreparable damage that could extend into the future generations. Here, Oiticica, a former medical student, characteristically concludes his argumentation with a neo-Lamarckian assertion: “a non-

³⁰ Oiticica, n°1: 5.

³¹ Ibid, 6.

³² Rabinbach, 182.

³³ Ibid.

³⁴ Oiticica, n°1: 7.

³⁵ Ibid, 8.

³⁶ Rabinbach, 6.

celled organism will produce another non-celled organism, and even more so when the living conditions of the progenitor remains unchanged in the progeny”³⁷.

Taking Kropotkin’s anarchist logic as a comprehensive and scientific method to understand nature and society to its extreme,³⁸ Oiticica incorporates and reinterprets the fundamental principles of energetic materialism by linking them directly to anarchist themes, from criticism to hierarchy, authority, property, competition and capitalist ethics.

Thus, a second source of waste of human energy, analyzed specially regarding its effects on women, arose from the contemporary hierarchical system of modern society. Maintenance of the hierarchical patterns of society was especially warranted by state education, clerical education, or non-education, which reinforced or disseminated class bias. Keeping women in systematic ignorance was especially harmful for the development of intellectual energy.

Moral energy in our society, as reported by Oiticica, was wasted in the cult of authority, which encouraged passivity by undermining the free exercise of determination and orientation of will, and that was strengthened by the mechanisms of transmission and reaffirmation of obedience, namely the courts, the law, regulations, and the police. Women were the main targets of this policy, since this social order required them do be psychological automaton entities, so domesticated in that they could be controlled in several ways:³⁹ “The bourgeoisie [and] religious prejudice rule over her, the authority of the husband rules over her, confessors, fashion, vanity, whims rule over her - Infernal monastic laws rule over the nun. Proletarian woman - bosses and misery rule over her.”⁴⁰

Disdain of the development of the workers’ skills was the cause of waste of practical energy in modern society. Within the contemporary logic of work division - based on a competitive spirit - the selection of the fittest, and the reduction of a worker to a “simple flesh and blood machine”⁴¹, curtailment of skills and of productive capacity takes place. Grounded on an authoritarian regime, besides limiting the access of women to certain professions such as medicine and engineering, society further limits their political rights and transfers the administration of their goods to their husbands. Proletarian women were not able to choose their occupation, nor were they given the option to develop their skills. Therefore, Oiticica concludes that, in spite of the struggles for emancipation, “since her actions are extremely regulated, curtailed [and] limited, the woman still represents a tremendous waste of practical energies.”⁴²

The last type of human energy wasted in the capitalist system was social energy. Oiticica maintains that the overall ruling social principle states that human beings, “facing the impossibility to take hold of natural energy each one by his own, get together and compose their [individual]

³⁷ Oiticica, n°1: 7.

³⁸ Kropotkin, *Modern Science*. 36. Kropotkin also used metaphors related with social harmony and natural energy balance; natural harmony he called a “lasting equilibrium between diverse energies,” cited in Roslak, 385.

³⁹ Margareth Rago discussed the process of constitution of female identity in Brazil at the beginning of the century and the anarchist critique to its overwhelming social and moral consequences; see: *Do Cabaré ao Lar: A utopia da Cidade Disciplinar, 1890-1930* (Rio de Janeiro: Paz e Terra, 1985).

⁴⁰ Oiticica, n° 2: 8.

⁴¹ Oiticica, n° 3: 8.

⁴² Ibid, 8.

forces into a resultant that has the virtue of economy as its mechanical resultant”⁴³. Thus, efficiency was linked to the harmonious combination of interests and efforts. In this way, the modern *social machine*, based on a clash of interests, friction, and competition was a source of constant energy waste.

Oiticica stresses that, whereas in mechanics friction and shock are two negative work coefficients that must be reduced to a minimum, it is impossible for the capitalist mechanism to be rational, despite the discourse of political economy. According to this author, if we define the concept of morality relevant to a new social ethics of energy conservation⁴⁴ as the orientation of human beings aiming at the maximum appropriation of energy, competition consequently is the “biggest source of immorality” in society, whereas women are the main victims of unbridled competition in capitalism. Victimized by the logic of competition, women suffered its consequences, especially through two factors: marriage and prostitution. Marriage in bourgeois society is seen as a contract aiming at an uplift of the social and economic family position, and constitutes a prison for women. Prostitution, on the other hand, is posited as a social institution directly connected to the iniquity of bourgeois marriage and to the logic of competition that creates poverty and inequality. Oiticica states: “Where there are bourgeois paying for their pleasures with money, exorted from the mass of workers reduced to hunger, there will be prostitutes, there will be prostitution. Therefore, prostitution is not a necessary evil; it is a necessary consequence of a social system based on competition.”⁴⁵

In his last article on this subject in *A Vida* [Life], he undertakes a forceful attack against the role of the Catholic Church in female alienation. Oiticica also emphasizes the need to make full use of social energies. Since from his point of view energy is solidarity, a break with “traditional, economic, political, religious iniquities [...] the domain of faith and of the canon [...] the regime of exploitation of the weak by the strong”⁴⁶ was necessary, and it could be achieved by an anarchist program understanding woman, “as an autonomous being, the free partner of a free man, a helpmate aware of the maximization of human Energy, guided by the same science, the same rights, exempt from religion, from poverty, from the false morals of chastity, from the authoritarianism of fashion, from marriage and from prostitution”⁴⁷.

We may say that as Oiticica updates the meanings of dematerialized scientific materialism - thus based on an abstract concept of energy - grounded on the practices of female emancipation and on the actuality of the current social practices in the Brazilian world of labor, he produces a narrative of resistance that reshapes Ostwald’s social energeticism. He imprints radical nonconformity with capitalism on it, which ultimately dissolves conventional productivism and its

⁴³ Oiticica, n° 4: 33.

⁴⁴ Rabinbach, 8.

⁴⁵ Oiticica, n° 4: 35.

⁴⁶ Oiticica, n° 5: 75.

⁴⁷ Ibid, 78.

fear of entropy into a wish for the voluptuous liberation of compressed energies, specially the female ones, into a new social and natural regime of complete energetic efficiency, viz. anarchism.

Representations of science and technology in the anarchist thought of Maria Lacerda de Moura

Maria Lacerda de Moura was a well-known feminist of anarchist-individualist tendency profoundly influenced by thinkers such as Han Ryner and Leon Tolstoi. Some of her major works are: *A Mulher Moderna e o Seu Papel na Sociedade Atual* [The modern woman and her role in contemporary society] (1923); *Amor e Não Vos Multipliqueis* [Love and do not multiply] (1932); *A Mulher é Uma Degenerada* [Woman is degenerated] (1924); *Han Ryner e o Amor Plural* [Han Ryner and plural love] (1928); *Fascismo: Filho Dileto da Igreja e do Capital* [Fascism: favorite son of the Church and of capital] (1934); *Civilização: Tronco de Escravos* [Civilization: Trunk of Slaves] (1931). In this article we intend to analyze her views on science and technology as described in *Civilização: Tronco de Escravos*.⁴⁸

Right in the opening chapter entitled “A Ciência a serviço da degenerescência humana” [Science at the service of human degeneration], Moura criticizes the model of appropriation of scientific and technological knowledge of capitalism. Initially, and following the anarchist tradition of perceiving science and technology as potentially emancipating,⁴⁹ she briefly compliments the “larger effort of the free man” in the development of science. Then, however, she denounces this effort of production of knowledge as “perverted and prostituted”, since “industrialized capitalism takes over all this scientific effort, even while still an embryo, in such manner that it channels human energy towards one single direction - the struggle for competition, economic competition, assaults on already occupied positions, nationalism, and consequently war”⁵⁰. According to Maria Lacerda de Moura, science worships “capital and industry”, therefore, all scientific research is “monopolized by industrial interests and war conquests”⁵¹. Moreover, each new scientific discovery “is a source of international conflict”, as exemplified by the “big chemical laboratories” busy producing “toxic gases for the next war”.

Her concept of technology comes very close to the one of applied science, as stated in the following excerpt, “Civilization is an Everest of science applied to industry rolling over the life of humankind”⁵². Within this conceptual context, she states that “steam, electricity, the radio, everything, absolutely everything, has a key-role in the destruction accomplished by war - in the

⁴⁸ Maria Lacerda de Moura. *Civilização: Tronco de Escravos* (Rio de Janeiro: Civilização Brasileira, 1931). For better understanding of Moura's work, see Míriam M. Leite, *Outra Face do Feminismo: Maria Lacerda de Moura* (São Paulo: Ática, 1986), e Margareth Rago, “Ética, Anarquia e Revolução em Maria Lacerda de Moura,” in *As Esquerdas no Brasil: A Formação das Tradições (1889-1945)*, ed. Jorge Ferreira, & Daniel A. Reis (Rio de Janeiro: Civilização Brasileira, 2007), 273-93. See also: Tatiana de Souza, “Tecnologias Políticas do Gênero no Brasil: A Contribuição de Maria Lacerda de Moura” (Master dissertation, Technological Federal University of Paraná, 2009).

⁴⁹ Thorpe & Welsh.

⁵⁰ Moura, 10.

⁵¹ Ibid, 11.

⁵² Ibid, 66.

name of the Moloch of the homeland”⁵³. Moura realizes with great insight the subtle interrelation between technical-scientific and industrial development, and the construction of the threatening military structure of the interwar period, “the war became so technical, so mechanical that every big industrial company is an arsenal in potency. The factory that produces press machines or propellers may at any moment [also] produce grenades”⁵⁴.

The process of resistance to this destructive structure was made difficult, according to her, by the passivity of workers, which was exemplary strengthened by the media. The cinema, for example, cultivated “imbecility, the prejudice of brute force, patriotic prejudice, religious superstition, the hypocritical morals of the Philistine society” and it had fallen into “the meshes of the absorbing industrialism and put at the level and within the reach of the masses rather than serving the level of the pure scientific ideal and the aspirations of social renewal by means of education”⁵⁵. This process of alienation of workers was strengthened by the use of the radio as an “instrument of the police and as an agency of all drugs that poison humankind, including the academic literary drug, the historical-patriotic drug”⁵⁶.

Maria Lacerda de Moura suggested some possible forms of resistance against this situation potentially destructing humankind. She strongly appealed, for example, to the refusal by workers to serve the system: “it would be more preferable the worker to self-amputate his both hands than to choose to work in arsenals of war, hydroplanes and machine guns, battleships and torpedoes”⁵⁷. Moura diagnosed that the ills of society came from the “excess of production, above all aspects, in agriculture and in industry, [being the] cause of all conflicts in contemporary society. Our evils do not come from lack, but from overproduction. The poverty of the world still comes from the abundance of wealth and material progress”⁵⁸.

She noticed the impossibility of “bounding Prometheus”, because “the industries, the machine-age cannot disappear from the capitalist system”⁵⁹. Thus, in order to avoid war, free individuals should appeal to the Tolstoyan solutions of objection of conscience, heroic desertion, protection of objectors, of assistance to deserters, in a way “not to contribute in any way to the collective madness of the massacre of humankind [...]”⁶⁰. Moura’s ideal prescribed individuals to forsake the capitalist lifestyle by means of increasing awareness, to trade this lifestyle that she called a “civilization of social vampirism” for a return to “hard labor on earth, to the simple and natural life, albeit full of understanding, of freedom”⁶¹. Maria Lacerda de Moura attempted to achieve this utopic community life when she withdrew to Guararema, in São Paulo countryside.

⁵³ Ibid, 12.

⁵⁴ Ibid, 99.

⁵⁵ Ibid, 13.

⁵⁶ Ibid, 14-5.

⁵⁷ Ibid, 16.

⁵⁸ Ibid, 18.

⁵⁹ Ibid, 101.

⁶⁰ Ibid, 101-2.

⁶¹ Ibid, 19.

Another aspect that we may highlight within the multifaceted critique to science and technology made by Maria de Lacerda de Moura is the attack to the rejuvenation techniques proposed by Dr. Voronoff, which are the subject of three articles of her book entitled “Voronoff”, “Ainda Voronoff” [Still Voronoff] and “E Voronoff descobriu o Macaco”⁶² [And Voronoff discovered the Monkey].

According to C. Sengoopta, scientist Serge Voronoff developed a series of radical endocrinological experiments, basically consisting in “the grafting of testicular tissue from chimpanzees or baboons into ageing men. These transplants aimed at fighting age and senile debility caused by 'the exhaustion of the testicles’”⁶³. A study carried out by E. M. Cuperschmidt and T.P.R. Campos addresses the reception of Voronoff's xenotransplants by Brazilian social imaginary triggered by his polemic visit to the county in 1928 to participate in a Medical Conference, where he performed a surgical operation – that seemingly failed - in Feliciano Ferreira de Moraes, a civil engineer and owner of a chicken farm.⁶⁴ These authors studied the repercussion of this visit as manifested in contemporary newspapers, caricatures, literature, and even music. This repercussion may be understood within the wider context of reception and political appropriation of many possibilities to reshape the natural social order through science, especially through experimental biology and the techniques and discourse of eugenics and hygiene active during the first decades of the 20th in Brazil. Indeed, the articles written by Maria Lacerda de Moura belong within this context.

To Moura, recourse to Voronoff's infamous techniques was due to the “fictional and tragic lifestyle in cities”, which were a “collection of infamy, vanity, bitterness, and poverty”, “great emporiums of commercial competition”⁶⁵. Here, she appeals to a given modern tradition to which criticism to the city substantiates social criticism.⁶⁶ Degenerated by urban life, we should seek “to find the elixir of long life, so that we might come back drunk with more menial sensuality and cupidity, and we might pour a few remnants of artificial existence into roulettes, cabarets, brothels, lupanars, and in the senile vulgarity masked as youth”⁶⁷.

Therefore, at a time of absolute decline full of moral failure, “it was necessary for a Voronoff to appear” as a symbol of the “quack science of modern industrialism, the science that served the golden calf, the science of human vampirism exhausted by early senility that sucks the glands of animals”⁶⁸. This was proven by the audience Voronoff's surgical operations, mostly “old, wealthy and powerful men, whose conscience was crushed by parasitism, whose safes were

⁶² For a discussion of Brazilian reception of Voronoff's ideas, see E.M. Cuperschmid, & T.P.R. Campos, “Os Curiosos Xenoinplantas Glandulares do Doutor Voronoff,” *História, Ciências e Saúde - Manguinhos*, 14, n°3 (2007): 737-60.

⁶³ C. Sengoopta, “Secrets of Eternal Youth,” *History Today*, 56, n°8 (2006): 50-6.

⁶⁴ Cuperschmid & Campos.

⁶⁵ Moura, 233

⁶⁶ Janet Perkins, “Mother, Bride and Harlot: Some Reflections on Woman-City Symbolism,” in *Utopia: Mitos e Reformas*, ed. Ivette Centeno (Lisboa: Acarte, 1993), 151-164, on 156.

⁶⁷ Moura, 24.

⁶⁸ *Ibid*, 46.

enriched at the expense of the exploitation of thousands and thousands of workers, at the expense of the martyrdom and servility of the human herd”⁶⁹.

Maria Lacerda de Moura argued that this science subjected to capitalist interests was the “modern Moloch”, and she resorted to the Tolstoyan reflection: “science occupies in our time exactly the same place that priesthood occupied some centuries ago. The same bonzes coated with titles, the same castes in sciences: academies, universities, congresses”⁷⁰.

This author complemented her reflection concerning the “Voronoff affair” by a return to the anarchist controversy over vivisection. On of the anarchist representatives in the controversy was Mikhail Bakunin, whose critique to modern science turned around the contradiction between science and life. In his view, when modern science overemphasizes abstraction, tends to move away from the plural concreteness of life, and one of its main consequences is the attempt by “scientific priesthood” to shape reality according to the image of the abstract idea.⁷¹ This process, for Bakunin, has vivisection as its main symbol, which literally is the sacrifice of life to science. Elisée Reclus, in turn, stated in an article on vegetarianism that,

“It is on account of the ugliness of it, that we also abhor vivisection and all dangerous experiments, except when they are practiced by the man of science on his own person. It is the ugliness of the deed which fills us with disgust when we see a naturalist pinning live butterflies into his box, or destroying an ant-hill in order to count the ants.”⁷²

Debbie Tacium also notes a historical connection between the feminist and the antivivisectionist movements:

“There is ample evidence of a clear link between the nature of animal experiments and the form of oppression to which women in the Victorian era were subject. Female oppression in that era included the ideas of victimhood; animals and women as property and without the rights that derived from owning property; submission to male/human authority; parallels between the restraining and surgical devices used on animals and in the medical treatment of women, including childbirth customs and gynecological examinations; as well as the imagery in some types of Victorian pornography.”⁷³

Therefore, in some respects vivisection became a symbol of the oppression of the weak, and of the cruelty of the established forces against the poor at that time. Maria Lacerda de Moura, anarchist and historical feminist, incorporated this antivivisection tradition and stated,

“I can only understand vivisection as a frenzy of unspeakable evil, I cannot

⁶⁹ Ibid, 27.

⁷⁰ Ibid, 37-8.

⁷¹ Thorpe & Welsh, 56.

⁷² Réclus, “On vegetarianism,” *Humane Review*, January 1901. Available at: <http://raforum.info/reclus/spip.php?article322&lang=fr>

⁷³ Debbie Tacium, “A History of Antivivisection from the 1800s to the Present,” *Veterinary Heritage*, 31, n°1 (2008): 1-9.

even see the advantage of the scientific drunkenness that puts thousands of guinea pigs and dogs and any kind of animal at the mercy of ‘scientists’ - public servants – vain to the point of causing suffering to the ‘martyrs of science’, in behalf of a principle, a discovery, a search, or problematic benefits for humankind resultant from this.”⁷⁴

Different from Bakunin, since she was an adept of a spiritualist trend of anarchism, Moura adds that “science is not acquired with cruelty [...] Humanity can progress without physiology, but it cannot progress without pity”⁷⁵.

Conclusions

Through a brief analysis of writings by José Oiticica and Maria Lacerda de Moura, we could notice the presence of contradictions and ambiguities typical of classical anarchist thinkers, such as Proudhon, Kropotkin and Tolstoy. Thus, Moura exalts the emancipation potential of science and technology, whereas she strongly criticizes its submission to capital. Oiticica makes a free appropriation of the theory of social energy to point out the energy wastage caused by the unfairness of capitalism and to state the natural superiority of anarchy in the field of energy efficiency.

Nevertheless, in spite of ambiguities and contradictions, or perhaps more precisely because of them, the libertarian authors here analyzed were able to build an original narrative of resistance against the hegemonic discourses on science and technology in Brazilian Old Republic, and proposed creative alternatives to the contemporary social organization. Among these, we highlight: the emphasis given by Jose Oiticica that science and technology should have utility and provide social welfare, in a new society where collective ownership of the means of production, feminine emancipation, and full exploitation of social energy prevail; and the desertion of cities - the locus for application of science and technology subject to capital par excellence, followed by an organic integration with nature through rural work, proposed by Maria Lacerda de Moura.

The text of libertarians Moura and Oiticica are narratives of resistance full of displacements and utopian resignifications written in a moment of profound socioeconomic transformation, in dialogue with an exciting anarchist social theory of science and technology in process of constitution.

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⁷⁴ Moura, 32.

⁷⁵ Ibid, 34.