

## **Educational and Environmental Crisis in Paulo Freire and Enrique Leff: for a critical environmental pedagogy**

**Victor de Oliveira Martins<sup>1</sup>  
Alana Ramos Araujo<sup>1</sup>**

<sup>1</sup>Universidade Federal da Paraíba (UFPB), João Pessoa/PB – Brazil

<sup>1</sup>Universidade Federal de Campina Grande (UFCG), Campina Grande/PB – Brazil

**ABSTRACT – Educational and Environmental Crisis in Paulo Freire and Enrique Leff: for a critical environmental pedagogy.** The article dialogues the contributions of Paulo Freire on the educational crisis with those of Enrique Leff on the environmental crisis. To this end, we analyze that both the context of education and the context of the environment reflect systemic, epistemological and civilizing problems, which produce unsustainable and hegemonic practices and thoughts. Thus, we start from bibliographic reviews between Paulo Freire and Enrique Leff, dialoguing with methodologies and theoretical currents of historical dialectical materialism and decolonial thought. We verified that the environmental pedagogy, as a symbiotic result of the interrelation of the contributions of the studied theoretical frameworks, it works as a way to face the environmental crisis and natural resources and as a new civilizing model through criticality, complexity, transdisciplinarity, sustainability and justice.

**Keywords: Environmental Education. Paulo Freire. Enrique Leff. Critical Pedagogy.**

**RESUMO – Crise Educacional e Ambiental em Paulo Freire e Enrique Leff: por uma pedagogia ambiental crítica.** O artigo dialoga as contribuições de Paulo Freire sobre a crise educacional com as de Enrique Leff sobre a crise ambiental. Para tal, analisamos que tanto o contexto da educação, quanto o contexto do meio ambiente refletem problemáticas sistêmicas, epistemológicas e civilizatórias que produzem práticas e pensamentos insustentáveis e hegemônicos. Partimos, assim, de revisões bibliográficas entre Paulo Freire e Enrique Leff, dialogando com metodologias e correntes do materialismo histórico dialético e do pensamento descolonial. Verificamos que a pedagogia ambiental, como resultado simbiótico da inter-relação das contribuições dos marcos teóricos estudados, se perfaz como caminho para enfrentamento da crise ambiental e dos recursos naturais e como novo modelo civilizatório por meio da criticidade, complexidade, transdisciplinaridade, sustentabilidade e justiça.

**Palavras-chave: Educação Ambiental. Paulo Freire. Enrique Leff. Pedagogia Crítica.**

The pedagogy of environmental complexity builds itself, thusly, in the forge of the unthinking thought, the procedure, of what is not yet, in the horizon of transcendence for otherness and difference, in the transition to sustainability and justice – therefrom the conceptual principles that guide an environmental pedagogy are detached (Leff, 2009, p. 5).

## Introduction

It is an unquestionable fact that the natural environment shows, quotidianly, intense signs of imbalance. The constant and excessive exploitation of natural resources is based on a systematic logic that disregards socio-environmental demands and is guided by economic interests. Thus, when we think about the environmental crisis, a series of ideas and speeches are activated to try to understand and solve the problem, however, there may be constitutive flaws in this rational exercise, as the methodological complexity involved in questions about the natural environment and society is not considered, therefore exposing our civilizing crisis.

From this, we realize how there are several ideologies that obey the cultural logic of production, consumption, and capital, which influence both social inequalities and the compulsive exhaustion of the global environment. Because of this, it was adopted a critical way of thinking about certain historic rationalities which give structure for logics of exploration and oppression as, for example, technical, formal, instrumental, and economic rationalities. Through bibliographic revisions and an inter(trans)disciplinary referential about social, economic, historical, legal, and environmental issues, we realized how the political-hegemonic bias about the environment intrinsically collaborates for our environmental crisis and the imminent degradation of nature.

For that matter, believing in the transforming and emancipating power of education, we decided to dialogue the contributions of the Brazilian educator Paulo Freire about political-pedagogical methods with the environmental theories of the Mexican sociologist Enrique Leff. Through the dialog between both, we used dialectical-historical-materialism as a methodological aspect to assist in the processes of construction and deconstruction of ideological thoughts and praxis, emphasizing the role of environmental education in such contexts.

In this way, our proposal uses a note on the epistemological and political issues present in the educational process and environmental thinking, so we can undertake new perspectives, including decolonization, and actions that transform the present reality. In this wise, we assume that complex environmental thinking, based on critical positioning concerning hegemonic, colonial, unequal, and exploratory systems, just like principles that are reasoned on a dialog between pieces of knowledge and its inter-transdisciplinary character, are fundamental to build an education and a praxis that reconnect the being and the world in a harmonic and sustainable condition.

## Critically Thinking the Being in Paulo Freire and the Environment in Enrique Leff

Before we initiate the proposition of thought directed to environmental education, it is necessary to emphasize a few pre-notions about the depth in the construction of the educational exercise. Therefore, as one of the main references of this research on the theme of education and pedagogical practice, it is considered the relevance of Paulo Freire and his teachings that can be considered essential to speak in the exercise of educating. Currently being the Brazilian Education Patron<sup>1</sup>, through Act N° 12.612 enacted on April 13, 2012<sup>2</sup>, he emphasized in his works that teaching, in a progressive political-pedagogical project, is not transferring knowledge. Teaching, as well theorized by the author, can be the transformation of the student's naive curiosity into epistemological curiosity, as well as the critical unfolding by the theoretical-practical dialectic based on reciprocal teaching-learning. Ergo, thinking about a Freirean pedagogy is to seek critical and praxis confrontation with fatalistic reality models, denying a dehumanized ideology that mischaracterizes the woman and the man as historical, social, and, by nature, unfinished beings.

The contradiction about how the educational process, being essentially political-pedagogical, can be situated on clashes between conflicting interests, is expressed in *Education as a Liberty Practice*, where the author affirms:

An education that would enable men the brave to discuss their problems. From his insertion in this problem. To warn him of the dangers of his time, so that, aware of them, he would gain the strength and courage to fight, instead of being taken and dragged to the perdition of his 'me', subjected to other's prescriptions. An education that put him in constant dialogue with the other. Which predisposed him to constant revisions. To the critical analysis of his 'findings'. To a certain rebelliousness, in the most human way of the expression. Which identified with scientific methods and process (Freire, 1967, p.90).

Freire still remarks:

We could not comprehend, in a society dynamically transitioning, an education that would take the man to quietist positions instead of that one that would take him to seek the truth in common, 'listening, asking, investigating'. We only could comprehend an education that would make of the man a being increasingly conscient of his transitivity, which must be critically used as much as possible, or with an ever-increasing tone of rationality (Freire, 1967, p.90).

In this way, we initiate the first essential complexity for the research: the pedagogical complexity. And, if we analyze one of the most reputable works of educator Freire, *Pedagogy of the Oppressed* (Freire,

2003), we understand that the educational process must be seen for its impossibility of neutrality expressed in the politics of Education (Freire, 1996), which should operate in a critical, transforming, and freeing way, on behalf of the emancipation of the oppressed groups and as an essential tool in overcoming inequalities and injustices. However, if performed uncritically, in other words, mechanistic and banking, the purpose would be aimed in the defense of the established order controlled by a specific elitist group of power.

From this understanding, at this moment we pursue a proposal of one analysis about ecological epistemologies that take into consideration the Freirian methodologies in ontological and methodological dialogue on the holistic of environmental thought adopted by Enrique Leff<sup>3</sup>. Once, through bibliographic reviews on both authors, we start from the understanding that theoretical networks are connected, therefore, the interrelation becomes relevant, due to the multi and /or transdisciplinary proposal adopted both by the progressive political-pedagogical Freirian project and by the plurality of environmental thinking expressed by the Leffian intellectual expansion.

And as we will see later, it is illegitimate to think about environmental education in a unilateral, monophasic, ontologically monist, mechanical and banking way, which consider a simplistic view of the structural, institutional, epistemic, political-social, economic, and even religious environment. This assumption was already verified by Dickmann (2015), Loureiro (2004), and Araújo Freire (2002), who understand the proposition of environmental education the necessity of going through the propelling critical notions in the logical-practical changing and, relating directly with its thematic in a dialogical and gnosiological consideration between ME-YOU and the world, they can stimulate critical consciences outraged by the contradictions interposed between environmental unsustainability/degradation and systems of oppression.

Thusly, we adopted as support of research Leff's thinking as a Mexican sociologist and environmentalist, who have a relevant contribution to the general and Latin American environmental issue, understanding through him the utopic possibility for the revolutionary emancipation of the critical and complex educational proposal. Considered one of the biggest thinkers in his field, he deconstructs the mechanistic ideology in the way that rationality is exercised in the environmental context, expanding this to a historical-social and economic context. Thus, in the work named *Environmental Complexity*, the author attributes a political environmental feature in the analysis of the systems and the patterns that encompass all the context of the occidental society, that ends up carrying the risks to which the environment and the so-called civilization in crisis suffer.

Thus, thinking about the environmental crisis for the author is firstly understand that it is not necessarily talking about an immediate, consequential, and materialistic crisis, where the solution is given by the technological developmentalism willing to repair caused damage in a calculating and mechanistic way. On the contrary, complexly

thinking the environmental crisis is to critically analyze in which way the environmental crisis itself is treated and portrayed, that is, taking into account that “[...] learning to learn environmental complexity entails a reappropriation of the world from the being and in the being” (Leff, 2010, p. 19), in order to problematize the traditional and technicists views on the environment and expand them to many other contexts that could contribute more efficiently in the resolution of conflicts and problems. Thus, according to Leff:

The environmental crisis, which is understood as a civilization crisis, could not find a solution through the theoretical and instrumental rationality that builds and destroys the world. Learning the environmental complexity implies in a process of deconstruction and reconstruction of the thinking; remits to its origins, the comprehension of its causes; to see the ‘errors’ of history that drag themselves in certainty about the world with false fundamentals; to discover and revive the being of complexity that stayed in ‘oblivion’ with the division between the being and the entity (Plato), of the subject and the object (Descartes), to apprehend the world by making it into a thing, objectifying it, homogenizing it. This dominant rationality discovers the complexity in its limits, in its negativity, in the alienation and uncertainty of the economized world, dragged by an uncontrollable and unsustainable production process (Leff, 2010, p.16).

To the author, to think of the environment through a human or humanistic conception is to have an environmental notion based on the alterity, or, according to Leff (2009, p. 5), in the view through *otherness*. He dialogues with the Freirian current of thought when talking about the assumption of the self in the face of the other as being a recognition capable of leveraging status of subjects, with rights, specificities, and demands, when he claims that: “The assumption of ourselves does not mean the exclusion of others. It is the otherness of the ‘not self’, or you, that makes me assume the radicality of the self” (Freire, 1996, p. 19).

Therefore, we must comprehend such questions in a complex approach, the manner how the multiple parts of a system or a social fact require to be seen by their peculiarities as subjects and not as objects or tools for an appropriate purpose<sup>4</sup>, it is also a critical assumption to the hegemonic capitalist and neoliberal logic, which calls the dispute between environmental rationality and economic rationality. To think about a reappropriation of nature is to complexify the economic rationality models that are imbued on the various sectors of Western societies, which mostly come from an anthropocentric view and, principally, anthropomorphizing. Hence, introducing complex thinking and intersectionality as methodological ways of constituting knowledge will serve us as a basilar proposal of popular environmental education, transmitting constructions, deconstructions, and complexities.

Starting there, the complex thinking as a way to comprehend the environmental theme proposes itself as a methodological critic to the

anthropocentrism and, partly, to ecocentrism, which simplifies and direct monophasically the heart of socio-environmental issues. Ergo, when we consider the environmental crisis as also being a social crisis, once indistinctly the social relationships have direct actions in the way that the environment is appropriated and misappropriated in a human finalist logic, we also attribute to the environmental movement anti-hegemonic battle.

And the decay of perspective on nature viewed only as a means or natural resource almost considering any intervention in it the mistaken idea that the ends justify the means, fends and hierarchizes, in this logic, the human from nature. Consequently, to think the communication between the systems that structurally govern society is to understand that these systems become inseparable and that focusing on only one over the other can create an inefficiency of the acting for not understanding the breadth of the problem, configuring various ideologies that debilitate the epistemology and praxis of complex environmental thinking.

### **Fatalism as an Educational-Environmental Ideology and the Complexity as an Anti-Hegemonic Proposal**

Environmental Education, so as various knowledge fields, can be systematically articulated in a progressive, critical, and emancipating bias or, otherwise, conservative, mechanistic and fatalistic. Therefore, we realized, through a critical optic, the form of how the exercise of thinking is based on interposed ideologies of dominant groups, ending by focusing on immutability or a rarefied change practical of the social fact, being, in this way, illusory. The concept of ideology is pointed by various authors, some referenced by the Marxist tradition of societal criticism, others for its ontological meaning in Education (Rossi, 2016) and the Law (Almeida, 2014). For this matter, we are going to adopt the concept of ideology from the work *What is Ideology*, written by the Brazilian philosopher Chauí:

Ideology is a logical, systematic, and coherent set of representations (ideas and values) and norms or rules (of conduct) that indicate and prescribe to members of society what they should think and how they should think, what they should value, and how they should value, what they should feel and how they should feel, what they should do and how they should do it (Chauí, 2008, p. 108).

From this, this ideology in the educational field constructs a problem that could be for the loss of criticism of the pedagogical exercise, fixing ideals, even if veiled, of immutability and neutrality of things. In fact, when we talk about the environment, unavoidably, the theme of the crisis and the disasters is mostly taken by a fatalistic speech, as if the environmental issue was something essentially tragic and inevitable, when in fact it was signified by the rules of a discursive logic which deal with institutional interests and disciplines of power (Foucault, 1996).

The fatalism as a teaching position is ideological, in the sense that, because of this naturalization of the environmental fact as something apart from the human action, removes the historical and social character that has always been intrinsic in this context. An example of this would be when we critically analyze the fine line that rules the discourses between natural disaster and environmental crime, realizing that the manner the occurrences in Mariana<sup>5</sup> and Brumadinho<sup>6</sup>, both in the state of Minas Gerais, are distanced from human action and characterized as a natural tragedy, relativizing issues such as damage and risk. Among other consequences of this, distance itself from the notion of civil environmental responsibility in the practical theory of integral risk (Pedroni, 2019; Pedott; Pires, 2019), and, mainly, occurs a process of trivialization and insensitivity or unconcern, as evidenced by Milaré (2009), by attributing that the environmental problem is postponed and it is not always that it sensitizes society and its leaders, once, as Lorenzetti claims (2010, p. 104), “[...] there is an environmental right that addresses to the consciences, but not to the conducts”.

If in this perspective, the conscience in the completeness of a fact can be propelling of transformation, so the environmental education would bring a necessity of knowledge by intermedium of a *Pedagogy of Indignation* (Freire, 2000), aiming to prioritize the right of contraposition, of action, and will of change the world. Otherwise, Freire analyzes:

The fatalistic ideology, immobilizer, that animates the neoliberal discourse is freely running in the world. With an air of post-modernity, it insists on convincing us that we cannot do anything against the social reality that, of historical and cultural, starts to be or becomes ‘almost natural’ ...From the point of view of such ideology, there is only one way to the educative practice: adapt the student to this reality that cannot be changed. What is needed, for this very reason, is the technical training, indispensable to the adaptation of the student, for his survival (Freire, 1996, p. 11).

Then, to think in a political-pedagogical environmental education in a way to escape from this fatalistic ideology is, above all, to situate the human being as a causing agent of transformations, evil or not, in the space. The complexity of Education is made in conformity with the complexity of human characteristics, being them political, economic, environmental, historical, and social, because there is no way to talk about transforming education without using criticism and problematization in the face of a dogmatizing, conservative and fatalistic thinking.

And, if just a moment ago we mentioned that ideology can remove the human action from environmental responsibilities, some awareness campaigns or social mobilization may, partially, inversely assign that full responsibility to, for example, consumers. Thus, let’s consider the situation of water resources, mainly the issue of potable water and its bad management in the Brazilian context. We realize that, as Araújo analyzes (2015, p. 1), there are various legal and legislative conflicts over

anchoring “[...] in economic mechanisms that prioritize economic development to the detriment of social and environmental development”. That justifies, in this case, when the movement of the combat against the waste of water establishes to civil society an adjust of individual behavior and do not make the economic sector related to agribusiness responsible, which is a major agent responsible for the water crisis in Brazil<sup>7</sup>.

Consequently, dogmatically transfer environmental knowledge without a critical-reflexive approach to students is ineffective for true Leffian environmental rationality, what is needed is critically amplify the way the theme is presented. Is to situate, firstly, the individuals in constant learning in their territorialities, because they understand from there the social vulnerabilities that reflect the entire educational process as an integral part of society and the community, and not as an apart vector. Furthermore, bring the socio-territorial realities closer in a learning context influences the integration of rationalities produced by contextual experiences as a contribution to the anti-hegemonic fight that consists in overcoming social, economic, and, therefore, environmental inequalities.

In this perspective, to understand the woman and the man as unfinished beings, in other words, always susceptible to learning new learnings, of transforming their actions and the environment they live, beyond that, above all, beings that are conscient of their incompleteness, it is an essential assumption in the refusal of immobilizing fatalism in the educational environment. To the fact that the individual is unfinished, the education cannot be restricted to the child or the young, but, even as a criticism against the number of illiterate Brazilian adults<sup>8</sup>, it needs to be extended to all age groups and, especially, to all social classes.

To relate, for example, the issue of social inequality as one of the catalyzers of the environmental crisis is a form of situating the working mass to these contexts, where they can reassess their ambits and experiences in the teaching environment, understanding and transforming them. Because, it must be emphasized, retaking the contributions of Chauí (2008) about the concept of ideology, that the idea builds the reality just like the reality builds the idea reciprocally, having, in a historical-social space, a dialectic, hence the Historical-Dialectic Materialism by Marx and Engels (2013). Therefore, the education that creates through the sciences conceptual buildings (Nietzsche, 2007), without any contact with the reality, distancing the theory of the practice, is an example of a redundant, alienating, mechanistic, and banking education.

In this way, we trigger the relevance of Complex Thinking<sup>9</sup> in the environmentalist reformulation of Leff, in expanding the epistemic bases of environmental knowledge, finding it in a philosophical immersion that even follows their academic successor influences. Due to this, dialogue this rhetoric in opposition to simplistic, unidimensional,

and semiotic thinking with the environmental issue was, in fact, placed as executable in the Leffian Environmental Complexity, which brings together the being and the world through a dialogical pedagogy that strategically situates other formulations and discursive elaborations concerning the environment, such as environmental holistics.

How would it be possible to discuss the environment without also discussing private property and why some have things and others do not? And, how to justify this reason without discussing structural racism discussed by Almeida (2008) in the Brazilian social-historic formation, that incorporates itself with the necessity of seeking for environmental justice (Herculano, 2006) as an oppositeness to environmental racism, in a way to guide a critical environmental education that takes into account territorial ethnic-racial relations? And, maintaining the same line of questioning about macrostructures of oppression and asymmetries of power, we must include in this debate the patriarchy in its dominant western culture form, discussed by Beauvoir (1970), after all, how could we transform into ecological individual *the second sex* that it is not even elevated to the dignity of human?

The intentions of this research, when evidencing such disquietudes, are not in the scientific presumption to exhaust these problems or to resolve such contradictions, but to make relevant the connection that is created between different philosophical theories materialized in movements and articulations against systems of oppression, with the context of the environment and the environmental fight. Thusly, it is necessary to talk in an exercise of environmental pedagogy as a tangle of factors and power relations that intersect, in which it is ineffective to work and teach the environment without critically dialoguing with this intersectionalities<sup>10</sup>, especially when the ideologies present in the teachings and speeches are crossed by colonialities and elitisms, needing a referential basis from the decolonizing methodology as necessary to the environmental pedagogical process.

## **Dialogue between Knowledge in the Decolonization of Environmental Education: on otherness**

To start from the complex thinking of the environment and so reflect it in a political-pedagogical manner, it is necessary to take as a starting point the questioning about what theoretical and territorial references are being hegemonized in knowledge spaces, identifying abyssal thoughts and critically problematizing them, providing a reconstruction of southern epistemologies, that intercross pieces of knowledge in their identity territorialities to provoke decolonization of the being, the knowledge and the power (Santos; Meneses, 2009).

It must be considered that, when looking for construction and solidification processes of the modern western scientific knowledge, there is the historic moment of globalization as a landmark in this intensification of shock, subjugation, and assimilation between cultures. In its

turn, using the concept of peripheral capitalism of Wolkmer (2015), we realize how Brazil, so like many other Latin-American nations, went through an intense diffusion of knowledge and cultural practices, given the processes of colonialism, enslavement, and imperialism, that ended by intensifying intrinsic issues in the formation of these National States. The concept deliberated by the author encompasses a necessary perspective to disunify the thinking about the construction of knowledge and of action for the people in their territory, given the demand of emphasizing peculiarities between areas that encompass developments and underdevelopments, what would even bring particularities of action and logic from the organizations/systems of human rights, such as the UN and the Inter-American and European Human Rights Systems.

Thus, globalization caused both economic and cultural problems, and environmental problems as well, due to the deepening of market relations, until the boosting of an economic logic characterized by consumerism and unsustainability. Therefore, a so-called *Political Ecology* must be had in the heart of the critical pedagogical teaching thinking on environmental education:

The political ecology roots the theoretical deconstruction in the political arena: besides recognizing the cultural diversity, the traditional knowledge, and the rights of the indigenous people, radical environmentalism confronts the unifier hegemonic power of the market as the ineluctable destiny of humanity (Leff, 2015, p. 2).

Yet for the author:

The decolonization of the knowledge and the legitimation of others' knowledges-wisdoms liberate alternative ways of understanding reality, nature, human life, and social relations, creating new paths to the reconstruction of the human life on the planet (Leff, 2015, p. 2).

In this way, we both searched a dialogue between knowledge, and also an educational proposal in breaking the Europeanized and colonizing paradigm, enriching utilizing inter and transdisciplinary, and evoked legal and cultural pluralisms in the search for the achievement of the democratic dialogue in the valorization of the peoples that are epistemologically and materially tangent. With this, the knowledge of the original, quilombola, traditional, and popular people, becomes an essential aspect of the dialectical exercise between teaching and learning, adding experiences and perceptions that are not necessarily formalized by academia or science due to pure doctrinal elitism.

Reasoning, in this way, as an example of decolonization of the pedagogical environment as a manner to build the autonomy of the students, we have the work of Célia Xekriabá, culture teacher in the Brazilian state of Minas Gerais, which stimulates the creation of a model and educational thinking that encompasses the demands and contexts from indigenous people, affirming:

Our great challenge is to think about the indigenization of educational practices because didactic materials come to us contemplating the western context. It is like the culture of the other was stronger. There is a great fading in the academic environment of indigenous students. Some students go to university and are not considered knowledge interlocutors in this environment. But there must be a reverse process, which is indigenization, why not indigenize the other? Why not quilombolize or countrynize the other? We must sensitize the other to the indigenous cause, not having it as lesser knowledge or only as rhetoric, or just like the people of orality, but as people who produce different knowledge processes. And the generalized knowledge is in crisis. We need another process and I believe that indigenous peoples can contribute (Damázio, 2017).

Therefore, to have in practice the exercise of otherness is to build a dialogical exercise that complexifies the universal truth model, needing to problematize the pretentious character of institutionalized knowledge of being hegemonic and globalized. The intolerance that the knowledge produces by itself, self-titled validly unique, makes it ontologically flawed, makes it the maximum expression of the truth of the herd and never the truth of the thing itself (Nietzsche, 2007). The pedagogical practice that built itself unilaterally conditions and limits the education as a knowledge transferor, it constitutes a vertical and hierarchical movement, which confirms to the students they named etymology: *alumnus*.

Decolonize the dominant epistemology as an educational doctrinal practice, it is also to make relevant the identity aspect of an ecological fight in the quest for the emancipation of Latin American peoples and cultures. To sum up, the autonomy of the knowledge unrelated to the standards established by instrumental, economic, and colonizing rationality will happen through the cultural and educational revolution, based on the assumption of the complexification of systems that are inherent to the sociability of these people. At this point, we emphasize William's contribution (2009) as a way of looking anthropologically at socio-historical processes in humanity, in their moments of control and oppression, responsible for appropriations, expropriations, plundering, alienations, and capitalizations of cultures, knowledge, and practices, in order to understand the consumerism society and cultural elitization as interposed problems.

An effective dialogue between knowledge as an example of cultural complexity immersed in the educational practice can be comprehended, for example, in the exercise of Article 26 of the Law of Directive and Bases (LDB)<sup>11</sup>, when considering the importance of preserving and spreading the Africanity of Brazilian knowledge. The relationship that Afro-Brazilian peoples and cultures have with the environment, despite being tangent and invisibilized in comparison to the particular whole of predominantly white culture, informs considerably about the plurality

of perspectives and actions to be considered in the socioenvironmental spheres, being complex the relationships and interrelations that occur in this unexpected web of life (Capra, 1996) interweaving perspectives, experiences and places of speech (Ribeiro, 2017), which are inherent to environmental education.

Therefore, if before we thought of doctrinal scientism as the best way to practice environmental teaching or not, following the Europeanized logic of thinking, now, to overcome the ecological crisis and, mainly, the crisis of civilization and rationality, there is an urgent need to deconstruct this ineffective model, through the criticality of complex thinking. Thinking about the environment is necessarily to differentiate all living and non-living that constitute the matrix of the natural functioning of things, that even the human being throned as the only possessor of animal rationality, there is, among all human beings, different kinds of rationalities that are vital for the promotion of environmental education, as a legacy of the diversity and the respect to the difference. And, as we are going to see in the next topic, the dialogue between knowledge and the contraposition to the hegemonic systems project themselves in the utopic<sup>12</sup> searching for overcoming limiting rationalities such as economic, formal, technical, and instrumental.

Due to this, we brought the importance of this pluralization of debates and experiences in environmental pedagogy, as well as the redefinition of doctrinal and hegemonic rationalities as the only way out of the environmental crisis being expressed by Leff, when he affirms:

Environmental complexity helps a process of building knowledge from the difference of being. The being, diverse by its culture, reframes your knowledge to give you your personal seal, to inscribe their cultural style, and reconfigure collective identities. The pedagogy prepares the encounter of diverse beings, dialoguing from their different identities. Environmental complexity opens up to a recognition of the world from the limit law of nature (entropy) and the limit law of culture (finitude of existence). Environmental complexity is built and learned through a dialogical process of knowledge, in the hybridization of science, technology, and popular knowledge. It is the recognition of different cultural meanings, not just as ethics of otherness, but as an ontology of being, plural and diverse (Leff, 2009, p. 22 e 23).

Before such considerations about the decolonization of environmental thought and considering it as a privileged space for the utopian possibility, urges to detail this utopia from the deconstruction of economic rationality as a model of life and development.

### **The Overcoming Economic Rationality over a Transformative and Utopian Perspective**

We can define that the environmental crisis is the crisis of our time, but it is also our future crisis, however, it was not always refer-

enced in the same way, given the historical process that differentiates the relations that humans have to the environment. The unsustainability caused by unrestrained production, related to exacerbated consumerism, without the proper balance of the process of natural renewal of the environment, would be one of the plausible defenses to justify the current model of society as categorically inappropriate.

In fact, it is surmised, from an extensive analysis of ecological issues<sup>13</sup>, that the developmental culture in the search for technological and scientific advancement is ingrained in the process of constitution of National States in general, starting from a global problem, given the historical movements of globalization and world wars that stimulate economic growth. If, on the one hand, we understand that modern human intervention is conditioned by a model of economic, developmental, and production rationality, on the other hand, we tie the bases of this unsustainable system with the thought that being and matter are invariably mutualistic. Hence the thought of Antunes (2010) on Environmental Impact, stating:

Humanity needs to intervene in nature to survive. No matter how 'environmentalist' a person is, he or she cannot live without consuming environmental resources. Any human action has repercussions on nature. The man is condemned to live off natural resources or to succumb without using them. Even the most primitive communities use environmental resources and, incidentally, many of them in a very predatory way. It is well seen, therefore, that the big question is 'hit the hand' not to overdo the dose (Antunes, 2010, p. 271).

There is no need to refute that humanity needs to intervene in its environment, to a greater or lesser extent, to survive, characterizing itself, incidentally, as an integral part of the environment in which it originates and is constituted. However, to relate human intervention in the environment to the modern logic of production and consumption is a way to trivialize the negative practice of environmental impact, distancing the possibility of positively rethinking this impact in a different or totally distinct logic. This could explain the idea that, once we are immersed in economic rationality in almost all contexts of society, we ended up believing that capitalism and economic liberalism are universal and timeless models, mischaracterizing its historicity and even its possibility of refutation. Mercantilism, capitalism and the (neo) liberalism are, taking into account the period of human temporality, new systems of thinking, and logistics, ergo they must be considered as nothing more than their basic definition: human construction. Being a human construction, emerges from this the possibility of deconstruction, as well as reconstruction, as a way to exalt the characteristic of women and men as autonomous and unfinished beings, in other words, liable to constant transformations and transformative actions.

Thus, several ways to rethink human action (environmental impact) arise, in a more ecologic and less unsustainable way, focusing on

treaties and agreements, in its majority of international scope. However, the initiative to establish attitudes and goals to seek to minimize negative damage to nature end up being ideological and illusory ways of camouflaging one of the main agents of the modern environmental crisis: capitalism. Hence, Löwy (2013, p. 81) claims:

If you do not want to talk about capitalism, it is no use to talk about the environment, because the issue of destruction, devastation, environmental poisoning is the product of the capital accumulation process.

Furthermore, Löwy extends this idea on the impossibility of think ecologically sustainable ways while maintaining the current economic rationality, including attempts to moderate or reform it. The author attributes, for example, the Kyoto Treaty as a solution that falls far short of what would be needed, also highlighting the fact of the biggest polluter of carbon dioxide (CO<sub>2</sub>), the USA, have not signed the treaty and that the constitution of the so-called rights market to pollute would be itself a way of invalidating the effectiveness of these movements. Thus, we can bring, from this analysis, the concept of Ecocapitalism by Melo (2010), which proposes, as well as Löwy (2013), that there is a non-reformist replacement of the system, but a revolutionary one of this economic rationality in force, through the adoption of Ecosocialism.

In fact, the dichotomy between environmental rationality and economic rationality is not, due to its complexity, encompassed in its entirety by this other dichotomy Ecocapitalism and Ecosocialism, however, the criticism is valid based on readings from the Frankfurt School which comes from the Marxist and Engelian classics. In the chapter of the book *Environmental Law, Social Fight and Ecosocialism*, entitled *Ecology and Socialism: the foundations of a new utopia*, Melo (2010) corroborates the need to rethink the bases of the capitalist system that boosts environmental degradation, adding the possibility of genuine environmentalism based on sustainability and fighting crises.

Still, the aforementioned author reflects critically on the possibility of how this proposal could abstain only in the philosophical dialectic of thought, when, in fact, its practical application would be the original focus of the construction of this thought. Thus, the ecological social fight as environmental activism is performed in different ways and different contexts, nonetheless, when it is about Ecosocialism, popular action in defense of environmental preservation is exalted as a symbol of utopian possibility in sustainable thinking. In this line of thought, about the fights of local populations, small farmers, forest people, ryot women, indigenous ethnicities, and among others, Mello (2010, p. 60) claims that:

There, there is a resistance that, starting from the concrete fight for basic human rights of dwelling, culture, way of life and production, and also the healthy environment, questions the fundamentals not only of the current economic model, but ultimately invests against the foun-

dations of the capitalist system's private appropriation mode, responsible for the current stage of degradation of the planetary environment. In these communities, it is opposed to not only material interests but antagonistic forms of life and production.

From what was exposed, both sustainable proposal and the educational project of theorize it break with the aspect of impossibility that is assessed on the execution and effectiveness of both. The *Environmental Rationality* (Leff, 2006), in contrast to all other rationalities (economic, instrumental, technical, and formal) that contribute to the environmental crisis, is taken as a methodological alternative to environmental pedagogy, which needs to reflect on philosophical and practical issues about the social spheres of individuals and consider them as active agents in transforming the environment.

The search for being more (Freire, 1996) in education stimulates individuals to have hope upward of what is entitled as improbable, impossible, and utopian, transforming human action as a mere variable, when in fact it is an elaborator and a re-elaborator of historical realities. Thusly, we seek an education that denies the fatalism of inequalities and the crisis due to the current unsustainable model, as seen in the following fragment:

The environmental pedagogy is not that of survival, conformity, and everyday life, but that of education based on the creative imagination and the prospective vision of a utopia founded on the construction of new knowledge and new rationality (Leff, 2009, p. 4).

In this way, economic rationality is read approximately, for both Leff and Freire. However, how both deconstruct and reinvent a new rationality is what makes them innovative in terms of their epistemological propositions. The educator thinks, with the contribution of the critical methodology by historical-dialectical materialism, a revelation of the capitalist exploratory economic model, which is a major factor responsible for the social inequalities and injustices that are evident in society, applying in this context a humanistic criticism. On the other hand, the environmentalist, also driven by the Marxist and Engelian classics, analyzes how the economic model based on the relentless pursuit of wealth ends up extolling developmentalism and inconsequential environmental degradation in detriment of the harmony of resources and the biosphere itself, focusing on the need to think of a logic that is revolutionarily different from the current thinking, in other words, to think about environmental rationality.

These dialogues, therefore, are essential to think about an environmental pedagogy, that takes into account societal culturalism, materialist contradictions, the critical dialectic of interposed ideas, environmental degradation, and the complexity of eco-sustainable thinking, for innovation in thinking and educational praxis.

## Conclusion

Given the debates and understandings present in this research, the interdisciplinary structure based on the approximation between authors of environmental, sociological, economic, anthropological, and historical approaches, we can establish the inherent complexity of contexts related to education, environment, economy, and society.

Thus, to understand the environmental crisis and also the crisis of a civilization is to look for the structures of modern societies that function as a mechanism of exploitation and oppression, so that, thusly, critical thinking can act at the heart of these problematics. Therefore, proving that unsustainability is an objective reality of our temporality and that can compromise several generations, we dialogue about this scarcity and anomalous change in natural resources with the cultural rationalities that are enmeshed in the political-institutional daily life.

If, in a certain way, we emphasize that the model of rationality and practical proposal in combating the environmental crisis is not working for not understanding the complexity of the subject, then, it's our duty to encourage a reorientation of ways of understanding the environment to achieve its political proposition in sustainable action.

With that, education becomes a space of reconstruction of knowledge through critical dialogues among pieces of knowledge, basing itself on the principle of democratic educational management as a way to spread values and experiences that lead human beings to achieve autonomy, emancipation, and critical conscience. Hence, we place the environmental education in a complex model that exalts the connection between teaching and learning, me and you, objectivity and subjectivity, being and the world, thought and practice, in order to ward off limiting hegemonic thoughts, that deny environmental rationality to prioritize instrumental and economic ideological interests.

The environmental pedagogy, thereby, inscribes human beings as responsible both for the social and environmental degradations in the world and as agents capable of building themselves as a positive difference in future possibilities, providing a utopia based on indignation, hope, commitment, and justice.

Translated by John Ryan Moreira

Received on July 28, 2020  
Approved on January 13, 2021

## Notes

- 1 About Paulo Freire, to consult Barreto (2004), which reflects about the trajectory of Paulo Freire and his commitment to social causes and vulnerable and oppressed groups, besides bringing an analytical approach on its methodology in the construction of a democratic perspective of educational management and the symbolism of resistance to dictatorial milestones in Latin America and the world.

- 2 Available on: <[http://www.planalto.gov.br/ccivil\\_03/\\_Ato2011-2014/2012/Lei/L12612.htm](http://www.planalto.gov.br/ccivil_03/_Ato2011-2014/2012/Lei/L12612.htm)>. Accessed on: May 14, 2020.
- 3 About the relevance and trajectory of Enrique Leff, to consult Foladori (2000), which highlights the relevant contribution to socio-economic-environmental thinking, for being considered one of the main Latin American authors in the field. Leff, environmental sociologist, Mexican, holds extensive interdisciplinary work on issues such as: environmental degradation, problems of civilization, colonization and decolonization, cultural rationality, social inequalities, environmental epistemologies, developmentalism and underdevelopmentism, education, and ecology.
- 4 The contributions of Marx and Engels (2013), after reformulating the Hegelian conceptions of the processes of contradiction and exploitation, reflect on how in certain historical contexts there is the appropriation of a certain being or thing to fulfill the ambitious purpose of another. Because of this, economic and instrumental rationality passes both asymmetrical power relations such as the master/servant and boss/employee context, as well as exploratory processes between human beings and nature. About the instrumentalization of nature by science, to consult Almeida (2001).
- 5 The case is available on: <<http://www.mpf.mp.br/grandes-casos/caso-samarco/o-desastre>>. Accessed on: April 10, 2020.
- 6 The case is available on: <<https://g1.globo.com/mg/minas-gerais/noticia/2019/01/25/bombeiros-e-defesa-civil-sao-mobilizados-para-chamada-de-rompimento-de-barragem-em-brumadinho-na-grande-bh.ghtml>>. Accessed on: April 10, 2020.
- 7 Available on: <[https://www.bbc.com/portuguese/noticias/2015/03/150302\\_agua\\_agricultura\\_pai](https://www.bbc.com/portuguese/noticias/2015/03/150302_agua_agricultura_pai)>. Accessed on: April 22, 2020.
- 8 About updated data about illiteracy in Brazil compared to previous years, to consult: <<https://oglobo.globo.com/sociedade/educacao/brasil-ainda-tem-113-milhoes-de-analfabetos-23745356>>.
- 9 Pioneered introduced by Edgar Morin, who attributes, in this perspective of problem-word (Morin, 2006), an inquiring, uncertain, confused, disorderly objectification, in order to problematize doctrinal knowledge and hegemonically limiting certainties, dialectically leading perception of the complexity of nature to the nature of complexity (Morin, 1977).
- 10 In Akotirene (2019), we identified in human subjectivities intersectional points, social intersections, and avenues present in power relations, that would be, in an analogous level of expansive optics, an expression of complex thinking.
- 11 Available on: <[http://www.planalto.gov.br/ccivil\\_03/leis/l9394.htm](http://www.planalto.gov.br/ccivil_03/leis/l9394.htm)>. Accessed on: April 11, 2020.
- 12 The concept of utopia or utopian possibility adopted in this research conforms to what Teresinha Felipe (1979) analyzes about this term in the Freirian conception. Therefore, we approach what the author claims to be: "The utopia, for Freire, is characterized as a way of to-be-in-the-world, which requires a knowledge of reality, because knowing is the possibility to 'pro-ject', to launch itself forward, to seek. The man seeks because he is not completely 'finished', for being 'unfinished', for 'waiting'. Hope is the axis that makes man capable of moving forward in the realization of his history" (p.1).

13 “[...] the current ecological crisis has a causality based on the complex and intricate network of mediations that composes the economic structure of the capitalist mode of production” (Aguiar; Bastos, 2012, p. 92), so it becomes essential to understand the complexity of modern economic structures to remove the core of its problematics and seek the viability of a broad solution.

## References

- AGUIAR, João Valente; BASTOS, Nádia. Uma Reflexão Teórica Sobre as Relações Entre Natureza e Capitalismo. *Revista Katálysis*, Florianópolis, v. 15, n. 1, p. 84-94, jun. 2012. Disponível em: <<https://www.scielo.br/pdf/rk/v15n1/a09v15n1.pdf>>. Acesso em: 05 abr. 2020
- AKOTIRENE, Carla. *Interseccionalidade*. São Paulo: Pólen, 2019.
- ALMEIDA, Ana Lia. O Papel das Ideologias na Formação do Campo Jurídico. *Revista Direito e Práxis*, Rio de Janeiro, v. 5, n. 2, p. 34-59, dez. 2014. Disponível em: <<https://www.e-publicacoes.uerj.br/index.php/revistaceaju/article/view/12876/0>>. Acesso em: 13 nov. 2019.
- ALMEIDA, Jozimar Paes de. A Instrumentalização da Natureza pela Ciência. *Projeto História*, São Paulo, v. 23, p. 169-191, 2001. Disponível em: <<https://revistas.pucsp.br/revph/article/view/10716>>. Acesso em: 12 jan. 2020.
- ALMEIDA, Silvio. *O Que É Racismo Estrutural?* Belo Horizonte: Letramento, 2018. Disponível em: <[http://www.uel.br/neab/pages/arquivos/Livros/ALMEIDA,%20Silvio\\_%20O%20que%20%C3%A9%20Racismo%20Estrutural\\_.pdf](http://www.uel.br/neab/pages/arquivos/Livros/ALMEIDA,%20Silvio_%20O%20que%20%C3%A9%20Racismo%20Estrutural_.pdf)>. Acesso em: 20 jun. 2019.
- ANTUNES, Paulo de Bessa. *Direito Ambiental*. Ed. 12. Rio de Janeiro: Lumen Juris, 2010.
- ARAUJO, Alana Ramos. Água e Desenvolvimento: análise da Lei nº 9.433/97 sob a perspectiva do direito de acesso à água potável. *Revista Jurídica da FA7*, Fortaleza, v. 12, n. 1, 30 jun. 2015. Disponível em: <<https://periodicos.uni7.edu.br/index.php/revistajuridica/article/view/29>>. Acesso em: 07 out. 2019.
- ARAÚJO FREIRE, Ana Maria. A Compreensão de Educação de Paulo Freire: indignação e sonho. *Revista de Educação Popular*, Uberlândia, n. 1, p. 09-16, nov. 2002. Disponível em: <<http://www.seer.ufu.br/index.php/reveducpop/article/view/20079>>. Acesso em: 04 jan. 2020.
- BARRETO, Vera. *Paulo Freire para Educadores*. 6. ed. São Paulo: Arte e Ciência, 2004. Disponível em: <<https://books.google.com.br/books?id=8m6RXzWakwcC&printsec=frontcover&hl=pt-br#v=onepage&q&f=false>>. Acesso em: 6 jan. 2020.
- BEAUVOIR, Simone de. *O Segundo Sexo I: fatos e mitos*. Ed. 04. Tradução de Sérgio Milliet. São Paulo: Difusão Europeia do Livro, 1970. Disponível em: <<https://materialfeminista.milharal.org/2012/08/02/livro-o-segundo-sexo-volumes-1-e-2/>>. Acesso em: 20 out. 2019.
- CAPRA, Fritjof. *A Teia da Vida: uma nova compreensão científica dos sistemas vivos*. Tradução de Newton Roberval Eichenberg. São Paulo: Cultrix, 1996. Disponível em: <<http://www.communita.com.br/assets/teiadavidafritjofcapra.pdf>>. Acesso em: 14 fev. 2020.
- CHAUÍ, Marilena. *O Que É Ideologia?* 2. ed. São Paulo: Brasiliense, 2008. Disponível em: <[https://edisciplinas.usp.br/pluginfile.php/388158/mod\\_resource/content/1/Texto%2014%20-%20O%20que%20%C3%A9%20ideologia%20-%20M.%20Chau%C3%AD.pdf](https://edisciplinas.usp.br/pluginfile.php/388158/mod_resource/content/1/Texto%2014%20-%20O%20que%20%C3%A9%20ideologia%20-%20M.%20Chau%C3%AD.pdf)>. Acesso em: 30 mar. 2019.

DAMÁZIO, Malú. Representante de Indígenas na Educação Defende Modelo Diferenciado de Aprendizagem. **Hoje em Dia**, Belo Horizonte, 17 jul. 2017. Disponível em: <<https://www.hojeemdia.com.br/mais/representante-de-ind%C3%ADgenas-na-educa%C3%A7%C3%A3o-defende-modelo-diferenciado-de-aprendizagem-1.543666>>. Acesso em: 11 abr. 2020.

DICKMANN, Ivo. **A Formação de Educadores Ambientais**: contribuições de Paulo Freire. 2015. 313 f. Tese (Doutorado em Educação) – Programa de Pós-Graduação em Educação, Universidade Federal do Paraná, Curitiba, 2015. Disponível em: <<https://acervodigital.ufpr.br/handle/1884/40272>>. Acesso em: 12 maio 2020.

FELIPE, Sônia Teresinha. **O Conceito de Utopia na Proposta Freiriana**. 1979. Parte da dissertação de Mestrado PUC/RS intitulada: O elemento utópico na pedagogia do oprimido, pela autora do presente. Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre, 1979. Disponível em: <<https://periodicos.ufsc.br/index.php/revistacfh/article/download/23744/21311>>. Acesso em: 26 mar. 2020.

FOUCAULT, Michel. **A Ordem do Discurso**. 3. ed. São Paulo: Loyola, 1996. Disponível em: <[https://moodle.ufsc.br/pluginfile.php/1867820/mod\\_resource/content/1/FOUCAULT%2C%20Michel%20-%20A%20ordem%20do%20discurso.pdf](https://moodle.ufsc.br/pluginfile.php/1867820/mod_resource/content/1/FOUCAULT%2C%20Michel%20-%20A%20ordem%20do%20discurso.pdf)>. Acesso em: 08 maio 2019.

FOLADORI, Guillermo. Na Busca de uma Racionalidade Ambiental. **Ambiente e Sociedade**, ano III, n. 6/7, 2000. Disponível em: <[https://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S1414-753X2000000100010](https://www.scielo.br/scielo.php?script=sci_arttext&pid=S1414-753X2000000100010)>. Acesso em: 18 jan. 2020.

FREIRE, Paulo. **Educação Como Prática de Liberdade**. Rio de Janeiro: Paz e Terra, 1967. Disponível em: <<https://cpers.com.br/wp-content/uploads/2019/09/5.-Educa%C3%A7%C3%A3o-como-Pr%C3%A1tica-da-Liberdade.pdf>>. Acesso em: 10 fev. 2020.

FREIRE, Paulo. **Pedagogia da Autonomia**: saberes necessários à prática educativa. 25. ed. Rio de Janeiro: Paz e Terra, 1996.

FREIRE, Paulo. **Pedagogia da Indignação**: cartas pedagógicas e outros escritos. São Paulo: Editora Unesp, 2000. Disponível em: <<https://cpers.com.br/wp-content/uploads/2019/09/11.-Pedagogia-da-Indigna%C3%A7%C3%A3o.pdf>>. Acesso em: 15 fev. 2020.

FREIRE, Paulo. **Pedagogia do Oprimido**. 37. ed. São Paulo: Paz e Terra, 2003. Disponível em: <<https://cpers.com.br/wp-content/uploads/2019/10/Pedagogia-do-Oprimido-Paulo-Freire.pdf>>. Acesso em: 12 dez. 2019.

HERCULANO, Selene. O Clamor da Justiça Ambiental e Contra o Racismo Ambiental. **InterfacEHS – Revista de Gestão Integrada em Saúde do Trabalho e Ambiente**, São Paulo, v. 3, n. 1, p. 1-20, 2006. Disponível em: <<http://www3.sp.senac.br/hotsites/blogs/InterfacEHS/wp-content/uploads/2013/07/art-2-2008-6.pdf>>. Acesso em: 19 jun. 2020.

LEFF, Enrique. **Racionalidade Ambiental**: a reapropriação social da natureza. Rio de Janeiro: Civilização Brasileira, 2006. Disponível em: <[https://www.academia.edu/37170084/Racionalidade\\_ambiental\\_a\\_reapropria%C3%A7ao\\_social\\_da\\_natureza](https://www.academia.edu/37170084/Racionalidade_ambiental_a_reapropria%C3%A7ao_social_da_natureza)>. Acesso em: 07 nov. 2019.

LEFF, Enrique. Complexidade, Racionalidade Ambiental e Diálogo de Saberes. Tradução de Tiago Daniel de Mello Carginin. **Educação & Realidade**, Porto Alegre, v. 34, n. 3, p. 17-24, set./dez. 2009. Disponível em: <<https://seer.ufrgs.br/educacaoerealidade/article/view/9515>>. Acesso em: 08 dez. 2019.

LEFF, Enrique. **A Complexidade Ambiental**. 2. ed. São Paulo: Cortez, 2010. Disponível em: <[https://www.researchgate.net/publication/28295572\\_A\\_complexidade\\_ambiental](https://www.researchgate.net/publication/28295572_A_complexidade_ambiental)>. Acesso em: 23 nov. 2019.

LEFF, Enrique. Political Ecology: a latinamerican perspective. **Desenvolvimento e Meio Ambiente**, Curitiba, v. 35, p. 29-64, dez. 2015. Disponível em: <[https://www.academia.edu/21562149/Political\\_Ecology\\_a\\_Latin\\_American\\_Perspective](https://www.academia.edu/21562149/Political_Ecology_a_Latin_American_Perspective)>. Acesso em: 13 fev. 2020.

LORENZETTI, Ricardo Luis. **Teoria Geral do Direito Ambiental**. São Paulo: Editora Revista dos Tribunais, 2010.

LOUREIRO, Carlos Frederico. **Trajetórias e Fundamentos da Educação Ambiental**. São Paulo: Cortez, 2004.

LÖWY, Michael. Crise Ecológica, Crise Capitalista, Crise de Civilização: a alternativa ecossocialista. **Caderno CRH**, Salvador, v. 26, n. 67, p. 79-86, abr. 2013. Disponível em: <[https://www.scielo.br/scielo.php?pid=S0103-49792013000100006&script=sci\\_abstract&tlng=pt](https://www.scielo.br/scielo.php?pid=S0103-49792013000100006&script=sci_abstract&tlng=pt)>. Acesso em: 30 mar. 2020.

MARX, Karl; ENGELS, Friedrich. **O Capital: crítica da economia política**. 2. ed. São Paulo: Boitempo, 2013. Disponível em: <[https://edisciplinas.usp.br/plugin-file.php/2547757/mod\\_resource/content/1/MARX%2C%20Karl.%20O%20Capital.%20vol%20I.%20Boitempo.pdf](https://edisciplinas.usp.br/plugin-file.php/2547757/mod_resource/content/1/MARX%2C%20Karl.%20O%20Capital.%20vol%20I.%20Boitempo.pdf)>. Acesso em: 14 jun. 2019.

MELO, João Alfredo Telles. **Direito Ambiental, Luta Social e Ecossocialismo**. São Paulo: Editora Demócrito Rocha, 2010.

MILARÉ, Édis. **Direito do ambiente: a gestão em foco: doutrina, jurisprudência, glossário**. 6. ed. São Paulo: Revista dos Tribunais, 2009.

MORIN, Edgar. **O Método: a natureza da natureza**. ed. 2. Lisboa: Editora Europa-América, 1977. Disponível em: <<https://abdet.com.br/site/wp-content/uploads/2015/04/A-Natureza-da-Natureza.pdf>>. Acesso em: 21 jan. 2020.

MORIN, Edgar. **Introdução ao Pensamento Complexo**. Tradução de Eliane Lisboa. Porto Alegre: Sulina, 2006.

NIETZSCHE, Friedrich. **Sobre a Verdade e a Mentira no Sentido Extra-Moral**. Tradução de Fernando de Moraes Barros. São Paulo: Hedra, 2007. Disponível em: <<https://abdet.com.br/site/wp-content/uploads/2014/11/Sobre-Verdade-e-Mentira-no-Sentido-Extra-Moral.pdf>>. Acesso em: 03 fev. 2019

PEDOTT, Laura; PIRES, Gabriel Lino de Paula. Responsabilidade Civil Ambiental nos Casos Mariana e Brumadinho. **ETIC**, v. 15, n. 15, 2019.

PEDRONI, Bruna Stefany da Silva. **Responsabilidade Civil Ambiental na Teoria do Risco Integral: casos Mariana e Brumadinho**. 2019. 121 f. Trabalho de Conclusão de Curso (Bacharelado em Direito) – Faculdade Nacional de Direito, Universidade Federal do Rio de Janeiro, Rio de Janeiro, 2019. Disponível em: <<https://pantheon.ufrj.br/handle/11422/10538>>. Acesso em: 10 maio 2020.

RIBEIRO, Djamila. **O Que É Lugar de Fala?** Belo Horizonte: Letramento, 2017. Disponível em: <[https://www.researchgate.net/publication/338931867\\_O\\_que\\_e\\_lugar\\_de\\_fala\\_de\\_Djamila\\_Ribeiro](https://www.researchgate.net/publication/338931867_O_que_e_lugar_de_fala_de_Djamila_Ribeiro)>. Acesso em: 07 jan. 2020.

ROSSI, Rafael. Educação e Ideologia: uma análise ontológica. **Filosofia e Educação**, v. 8, n. 2, p. 168-193, 30 set. 2016. Disponível em: <<https://periodicos.sbu.unicamp.br/ojs/index.php/rfe/article/view/8645985>>. Acesso em: 21 nov. 2019.

SANTOS, Boaventura de Sousa; MENESES, Maria Paula. **Epistemologias do Sul**. 1. ed. Coimbra: Almedina, 2009. Disponível em: <[http://professor.ufop.br/sites/default/files/tatiana/files/epistemologias\\_do\\_sul\\_boaventura.pdf](http://professor.ufop.br/sites/default/files/tatiana/files/epistemologias_do_sul_boaventura.pdf)>. Acesso em: 04 jun. 2019.

WILLIAM, Rodney. **Apropriação Cultural**. São Paulo: Pólen, 2019.

WOLKMER, Antônio Carlos. **Pluralismo Jurídico: fundamentos de uma nova cultura do direito**. 4. ed. rev. e atual. São Paulo: Saraiva, 2015.

**Victor de Oliveira Martins** is an undergraduate student of Law in the Department of Legal Sciences at the Federal University of Paraíba. Researcher in Group of Research Cultural and Environmental Knowledge: Studies in Tribute to Enrique Leff (ESAEL/CNPq).

ORCID: <https://orcid.org/0000-0001-7477-0794>

E-mail: [victordeoliveiramartins@yahoo.com.br](mailto:victordeoliveiramartins@yahoo.com.br)

**Alana Ramos Araujo** is a Ph.D. in Legal Sciences by the Postgraduate Program in Legal Sciences (PPGCJ/CCJ/UFPB). Professor in the Academic Unity of Social Sciences (UACS/CH/UFCG). Group of Research Cultural and Environmental Knowledge: Studies in Tribute to Enrique Leff (ESAEL/CNPq).

Vice-director of the Institute The Right for a Green Planet.

ORCID: <https://orcid.org/0000-0002-7443-0404>

E-mail: [ara.alanapb@gmail.com](mailto:ara.alanapb@gmail.com)

Editor-in-charge: Beatriz Vargas Dorneles

This is an open-access article distributed under the terms of the Creative Commons Attribution License 4.0 International. Available at: <http://creativecommons.org/licenses/by/4.0>.