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## **Environmental Education in the Hearths of the Capital: a critique of the neoliberal agenda**

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**ABSTRACT – Environmental Education in the Hearths of the Capital: a critique of the neoliberal agenda.** This article aims to discuss the relationship between neoliberalism and environmental education. Since the 1970s, the neoliberal agenda has modified economic, political, cultural, social, and educational structures in the countries that adopted it. Environmental education was not left out of these changes, becoming, in many cases, a tool that instrumentalizes nature and simplifies environmental problems. The theoretical-methodological perspective used in this text is based on sociological and historical analyses of neoliberalism, the crises of capitalism, and aspects of critical environmental education. The results presented revolve around the discussion on citizenship and political practices, in addition to the need for incisive decisions on environmental problems.

**Keywords: Environmental Education. Neoliberalism. Anthropocene. Capitalism. Citizenship.**

**RESUMO – Educação Ambiental nas Lareiras do Capital: uma crítica à agenda neoliberal.** Este artigo tem como objetivo discutir a relação entre neoliberalismo e educação ambiental. A agenda neoliberal, desde os anos 1970, tem modificado estruturas econômicas, políticas, culturais, sociais e educacionais dos países que a adotaram. A educação ambiental não ficou de fora dessas mudanças, tornando-se, em muitos casos, uma ferramenta instrumentalizadora da natureza e simplificadora dos problemas ambientais. A perspectiva teórico-metodológica utilizada neste texto tem como base as análises sociológicas e históricas sobre o neoliberalismo, as crises do capitalismo e os aspectos de uma educação ambiental crítica. Os resultados apresentados giram em torno da discussão sobre a cidadania e as práticas políticas, além da necessidade de decisões incisivas sobre os problemas ambientais.

**Palavras-chave: Educação Ambiental. Neoliberalismo. Antropoceno. Capitalismo. Cidadania.**

## Introduction

In 2012, video game developer *Tomorrow Corporation* released the computer game *Little Inferno*. Its graphics, plot, and gameplay were almost too simplified even for the market for this type of digital entertainment; however, the game was a success, with approximately one million copies sold in its first year<sup>1</sup>. *Little Inferno* takes place in a scenario where a harsh winter punishes a relatively populous city somewhere in the world. The inhabitants have only one function – that is the sole objective of the game: burning objects in the fireplace. The player spends about two hours (estimated time) in front of a fireplace into which he throws objects in order to burn them and obtain coins to buy new objects to set on fire. There is, throughout the game, the option of making “combos” by joining objects that have some kind of correlation – for example, a credit card and a piggy bank; ancient robot and ultramodern cyborgs: old or new. The game seems to indicate that the destiny of all material is to one day turn to ashes. Sometimes the player is interrupted by letters sent by the neighbor, who suggests objects to be burned, or asks for something to burn for herself. The game only ends when the player burns a specific set of objects requested by the neighbor, which causes a final explosion that destroys the fireplace and the player’s house. The character does not die, but starts to wander the world in search of a sunny place to live, definitively freeing himself of the fireplace and the objects.

*Little Inferno* is a silly game, particularly when watching it in the midst of the *gamer* world, in which the player’s immersion with the character or characters is the main appeal. We see the game as something quite different; a synthesis and critique, conscious or unconscious, of contemporary society, the neoliberal agenda, consumerism.

One of the most indelible marks of the 20th and 21st centuries is consumerism and disposability, although new styles of living – the search for conscious consumption, and/or the production of more durable goods – have appeared sporadically, as probable results of the practices and reflections of Environmental Education (EE).

It seems to us, however, that EE has often been practiced in classrooms from a palliative and prescriptive approach, which serves neoliberal interests more than its own objectives, being reduced to the instrumentalization of nature, the environment, and the human being<sup>2</sup>.

As we intend to discuss, the relationship between education and the environment should be approached with the aim of creating means of a new citizenship, to produce the “ecological citizen” (Carvalho, 2012). For this, it is necessary to overcome the correspondence between neoliberal ideas about the environment and an EE that accepts the system as it is, believing that, by proposing specific improvements – inert attempts to humanize capitalism –, it is capable of changing habits, behaviors, and modes of production. This type of EE seems to have adhered to the *status quo* out of pure passivity (Loureiro, 2015; Loureiro;

Layrargues, 2013). The contents emanating from this conservative-type EE also stoke the fireplace of *Little Inferno*.

From these questions, we aim to understand EE in the face of the neoliberal agenda of the 21st century, especially in the Brazilian case. For this, we discuss the education proposal offered by neoliberalism and relate it to EE, trying to demonstrate the deformations that neoliberalism caused it. Finally, we attempt to present exits from the difficult path to the hearths of capitalism.

### **Neoliberalism and Education: adding more fuel to capital's hearth**

Neoliberalism completed eight decades of existence in 2022. Regardless of its theoretical bias – American, French, Austrian, etc. –, the initial landmark for the dissemination of the neoliberal agenda took place in 1938 with the discussions promoted at the Walter Lippmann Colloquium, held in Paris, which included the participation of the main neoliberal names: Von Mises, Milton Friedman, Friedrich Hayek, among others. This event aimed to discuss the book *The Good Society* by Lippmann himself. The event also helped to lay the foundations for what would become the *Mont Pelerin Society*, from 1947, in the post Second World War era, and existing until today, as one of the epicenters of neoliberal thought (Dardot; Laval, 2016).

The core of the neoliberal agenda can be understood by the search for State, society, and legal reform, valuing or even mastering market decisions over social decisions, stimulating the development of productive forces, less state regulation on the economy, and related issues. These proposals may vary in depth depending on each author, but they reflect the generalized feeling among neoliberals of seeking alternatives to the *Welfare State* or Keynesianism and liberalism. An attempt, therefore, to recover capitalism and social adjustment to the market order and even to recover the dominance of the hegemonic class (Gentili, 1995; Harvey, 2005; Dardot; Laval, 2016; Brown, 2019).

The transfer, to the market, of the task of dealing with the transformations of the social world – especially in relation to work and production and consumption policies, in addition to welfare policies – has a relevant meaning for the conversion of civil society to a kind of cult of deregulation and privatization. The standardization of consumption habits carries with it a range of socio-environmental impacts that a large part of the underdeveloped world is required to deal with. Ignacy Sachs (2007) has already observed a correspondence between the growing interest in environmental problems and the decline in state planning and rise of neoliberal economics.

Neoliberal ideals took a few decades to become hegemonic. The 25 years that followed the Second World War were a period of economic growth, decreasing inequalities, strengthening of the middle class, and a certain peace – for the rich countries. The Keynesian economy was

still a success, guaranteeing prosperity to societies in central countries, with no room for the entry of neoliberal proposals, which would go against the grain of the *Welfare State*. An instrumentalist view of technology, a liberal and optimistic faith in progress, highlighted the promise of a *new world* of possibilities that opened up in the future, contrasting with the Frankfurt school, and technological pessimism from a rational morality. The rise of a post-normal science (Funtowicz; Ravetz, 1997) revealed the need to deal with the complexities and uncertainties of the broken promises of these *golden years*.

Hobsbawm (1995) classified this period of the world economy as the golden years, namely for central and western countries. In the period from 1945 to 1970, the *American Way of Life* infected the desires of the middle classes in marginal countries and gave the impression of the victory of capitalism over the socialist economies of the Soviet bloc. Even if economically there was no comparison between the central and peripheral countries, the cultural industry, with the advancement of American films, music, and pop art, was a reflection of its expansion to many other nations, such as Brazil<sup>3</sup>.

In the late 1960s, the *Welfare State* began a process of systemic exhaustion resulting, as Mészáros (2011) points out, from a structural crisis of capitalism as a whole and which had also been observed from specific crises, but with an ever greater intensity of capacity to disrupt the existing economic and social order. Melnikov (1978) shows how the economic policies implemented in the US, by providing increased consumption by the working class, in an “elevator” effect in which the entire social structure evolved together, but maintained the distances between classes, caused workers’ indebtedness. That is, even if conditions had been created for them to identify with the middle class in terms of purchasing power, due to increased wages and access to finance – housing, cars, household appliances, school, university, etc. – there was a loss in the real value of wages. According to Melnikov (1978) the working class only had the illusion of living in the same conditions as the wealthy classes, an illusion caused by access to products, but not by the real ownership of purchasing power.

The oscillation of the economy and markets in the 1960s called into question the relative stability of jobs and, from the following decade, with the oil crises in 1973 and 1979, buried the *Welfare* policies (Melnikov, 1978). Indebted workers had to deal with an inflation scenario that, although much lower than was common in peripheral countries, led to defaults and a decrease in consumption, cooling the economies of the US and the other countries that were direct or indirect dependents, i.e. much of the west. This context raised doubts about the viability of maintaining or even reforming Keynesian welfare economics. The neoliberal proposals, especially those of Friedman and Hayek, both focused on the US context, were echoed in political circles, being opened up for negotiation at political desks from Congress to the White House.

Structural reforms in the US promoted from the Nixon to Carter administrations in the late 1970s already had a neoliberal bias. Although not yet overtly dominant in the US scenario, this agenda was being implemented in Pinochet's Chile and being tested by other national governments in peripheral countries. The adoption, with certain adaptations, of the neoliberal agenda by the central countries had its main showcases in the governments of Ronald Reagan (USA) and Margaret Thatcher (England), and the recovery of the USA economy, in the 1980s, as proof of the neoliberal success. This success hid, however, the disaster in the economies of underdeveloped countries caused by neoliberal practices and the deepening of the crisis with the adherence to the Washington Consensus, imposed by the International Monetary Fund (IMF) and the World Bank, still in the 1980s. The fall of the Soviet Union was also used, in neoliberal propaganda, with the pretense of superiority to the socialist economy: a new rationale for the planet (Anderson, 1995; Harvey, 2005; Dardot; Laval, 2016).

In the following years, the neoliberal agenda was constant in most nations, whether governed by the right or the left. Tony Blair, Prime Minister in Britain, and Schroeder in Germany, although members of labor parties, adopted the neoliberal agenda in their countries, promoting an attempt at a third way, between this proposal and the Welfare State (Dardot; Laval, 2016). In peripheral countries, such as Brazil, the neoliberalism adopted by social democrats led to the downsizing of the State, with the privatization of state-owned companies – and strategic enterprises, in addition to the breaking of natural resource monopolies, in the Brazilian case, oil, and the weakening of social and labor policies<sup>4</sup>. Everything indicated that the majority of nations, according to their respective historical, economic, and social situations, would follow the agenda proposed by Friedman and Hayek.

As we move towards the third decade of the 21st century, neoliberalism is still maintained as an economic and social guideline. Although criticism has increased and other solutions have emerged, the foundations of this agenda continue to serve governments and their economists.

On such bases, in the first place, we must understand the structure that promotes this agenda: ideological reform and an alternative of power, both combined in a new common sense. Neoliberalism reifies the market, denaturalizing social and economic relations, especially those promoted by the Welfare State and socialist governments. This reification is not only the defining factor of the social set, but the driver of all society. In fact, neoliberalism enters a deeper level than the economic and the social, directly into the subjectivities, repositioning the place of the individual in society.

Foucault (2008) analyzed how neoliberalism was configured in the 1970s. For the French philosopher, this was based on rivalry, competition, and the individual freedom promoted by a specific type of disciplinary policy that he called *governmentality*, guided by social adjust-

ment based on the economic dynamics of the market. The market is the collator of society in which individuals would have freedom of choice. Such freedom, of course, as participating and active individuals in the consumer and work society.

Neoliberalism gradually occupied space in social discourse, proposing to remove the weight of the State from the shoulders of individuals, making them free to impose their subjective interests; restricting freedom by other mechanisms of control of individual desires and actions. A new morality, new responsibilities, a new market, a new sense of competition between subjects. In fact, a new guise for an old desire among liberals: the reduction of state interference. The difference in this new model was the fact that the State stopped acting directly on individuals, participating now as a partner in the new system that was being established: the social market economy, a process of material and symbolic restructuring of societies (Gentili, 1995). This resulted in the denaturalization of social and economic relations and the overlapping of the individual with the collective.

The State has not lost its place in this new social dynamic. The relevance given to individuals in the social fabric was accompanied by the role of the State as a creator of new needs and competences. By acquiring state-of-the-art technologies, creating industries, opening markets, importing products, or expanding bureaucracies, the State's taxes and fees also helped to redirect the subject in view of the options proposed by the market. The individual is free to choose among the possibilities offered by the Market-State (Dardot; Laval, 2016).

By directing its policies towards the reformulation of techniques and forms of knowledge, skills and expertise, the neoliberal agenda has transformed the State into a *social constructor*. The social is subordinated to the economic concomitantly with the maximization of individual freedom. This results in the formation of a "Government of Subjects" (Foucault, 2008), subject-clients, who have the ability to choose, even if subject to the market. It is the end of the Enlightenment illusion, of a totally free person, because, in neoliberalism, this is constantly being (re)conditioned by the market: the genesis of *homo manipulabilis* (Veiga-Neto, 2000).

In the governmentality of the neoliberal agenda, the subject must act as a company, selling its capabilities in the face of market interests. It must be an individual whose reasoning logic is competitive, acquiring the necessary and required skills to include and remain in the field of activity, or even be able to adapt to multiple functions. In neoliberal capitalism, like an industry, the individual is driven by the pursuit of profit and a mentality guided by the strategic reasoning of the logic of the social market economy (Foucault, 2008; Dardot; Laval, 2016).

There is a kind of reform of the *Self-Made Man*, an unusual figure of capitalism at the beginning of the 20th century who represented the tycoons who, overnight, became rich with their extreme ability to do business. Neoliberal logic promises the same to subjects: the oppor-



tunity to grow with their efforts and skills. The market would open its doors to them, all they had to do was accept its rules, which were, in a way, accepted, because hidden from this view was all the perversity of the neoliberal agenda. The role of human beings in this rationality is to acquire the products offered by the market, selling their workforce in an environment of extreme competition. The intensification of this process generated an army of excluded people at the same time that it created sacrifice zones for neoliberalism elsewhere. The exclusion of parts of the planet starts, then, to lead to its own historical exploration. It is the consolidation of such a rich class – with an asset that grows speculatively, which is not the result of any work – that no longer needs the poor so much and, therefore, starts to exclude them not only from the consumer society, but also from their territories, from the minimum conditions of health and survival (Sachs, 2007; Sassen, 2016).

The cradle, the family, the environment, the country, and the school are elements that contributed decisively to the formation of this subject-company. What has been implied is that the conditions for the individual are not only subjective, his want, his will, his desire: they are also objective conditions. The social support he had in his training process is one of them, both in building his skills for the market and in his training to accept this rationality – a training that presents itself in the effective conduction of subjective actions at various levels: from the subject's formation process – family, school –, to their minimal environment, an environment healthy enough for their daily *survival*. Education and the environment are rooted in the neoliberal agenda.

In this agenda, the educational processes are revised due to the subject's preparation for the market. In this reform, the teacher is responsible for training the workforce, what Hill (2003) called "social production for the market". The State, controlling the mass of individuals, is given the role of guaranteeing the delivery of this product. This guarantee comes to the State to provide the dissemination of a *performance culture* based on pedagogies favorable to the subject's adherence to the market.

Schools are even more hierarchical through family choices, which look for those that are most pedagogically and financially suited to their wishes. Thus, schools also end up being standardized, as they meet family concerns with the sole objective of preparing for the job market. However, the hierarchy allows those people who are at the top of the social hierarchy to be directed to a differentiated education – less technical, and more philosophical and cultural. It is a substitution of democratic responsibility, which, according to Hill (2003), occurs with this transition of the school's specialty, emptying the thought and space of criticism.

Sonia Marrach (1996) understands, in this sense, the strategic role of the school. In addition to adapting the individual to the dominant ideology and its function of preparing for work, the school is also a business space for the market, for the products of the cultural and informa-



tion industry. New methodologies, new didactics, the use of technology, fashion, etc., represent nothing more than the constant action of the market on curricular and individual training. Priority is given to *ways* of transmitting knowledge and curricula, to the detriment of contents, which are not changed because they are not understood as problematic for the neoliberal agenda. Contemporary criticism of the school lies in its efficiency, effectiveness, and productivity, in its disorderly expansion, with debatable quality.

The search for such criteria has been guided by the systematization of data that make the teaching routine even more complicated, what Graeber (2018) called *bullshit jobs*, a process by which capitalism creates useless occupations, normalizations, etc., which have the commitment to generate reports that supposedly prove the efficiency of teaching methodologies and the achievement of results. For Gentili (1995) the problem pointed out by the neoliberal logic is managerial. The notion of citizenship and excessive social rights are the targets of this new rationality for the school. Therefore, one must not only transmit the basic knowledge for the formation of the subject, as has already been done, but do it uncritically.

The education crisis is characterized by new mechanisms of quality control and evaluation based on articulated and subordinated forms to the market, providing education with entrepreneurial qualities and promoting employability<sup>5</sup>. This would make the school centralized by the productivist and market standard, which Gentili (1995) called *Total Quality Pedagogy*.

Given this situation, it seems appropriate to us to consider, like Hill (2003), that school and market are contradictory elements with regard to goals, motivations, and standards of excellence. School and market are contrasted insofar as, while the former seeks inclusion, collectivity and learning, the latter promotes exclusion, individualism, and momentary satisfaction. While the freedom brought by education is consolidated by knowledge, the market is left with only the promise of purchasing power. Thinking of education as resistance and transformation implies resuming the space of criticism. Hence the need for a critical EE, based on indignation, hope, commitment, and justice (Martins; Araújo, 2021).

### **Environmental Education: an alternative to the capitalist hearth**

A critical EE in the neoliberal world is the concrete possibility of escaping the tragic future that awaits us. We learned from an early age, through school, family, friends, movies, music, series, drawings, etc., that the future would be something better than the past, that progress was something evident, technological improvements, medical wonders, social balance, political peace, and many other possible features of this Jules Verne-style future. On the other hand, evidence has suggested (IPCC, 2022)<sup>6</sup> that the future is threatened, that it has been shortened,

that our horizon of expectations is small, and that everything that we could take from the past, the space of human experience, is no longer enough (Koselleck, 2006).

There has been an understanding, for some time now, that the environment is in crisis, and that humanity has a crucial role in its recovery. EE has been called upon for this task and has basically pointed to two different paths. *Traditional* EE does not seem to indicate anything other than conformism and blind faith in technology: with specific changes in our individual and collective actions we will overcome the environmental crisis, whether by recycling our garbage or building small gardens in the scarce green spaces of our schools, in a decontextualized way and merely 'individual'. *Critical* EE understands, in turn, that the root of the crisis is the social, economic, political, and cultural system itself. Contrary to the traditional approach, it questions why so much waste is generated, or why, in the food that arrives at our table, there are so many pesticides, exploitation of labor and depletion of the natural world. Would it not be appropriate to assume that the fact that a student who is encouraged to take possession of a small shovel and dig a school vegetable bed does not make him reflect on the real need for pesticides to be present in the food he eats, since the food that he is producing together with his colleagues grows without such harmful material?

From the National Curricular Parameters (NCPs) to the National Common Curricular Base (NCCB), we have the complete omission of new, updated guidelines for EE in Brazil. The fading of the discussion on the subject was not complete only because of the fifth reissue of the National Environmental Education Program (ProNEA) in 2018. Moreover, the practice of EE in the country has followed the principles of the legislation of the 1990s; considering the indications of the NCCB, it will be doomed to complete oblivion or marginalization in schools, universities, and other formal or non-formal teaching spaces (Colacios; Locastre, 2020). It is important to point out, however, that EE is one of the Transversal Contemporary Themes, supported by several legal frameworks, in addition to the ProNEA.

We start from the publication referring to environmental education in Brazil in the late 1990s. Law No. 9,795 of 1999 indicated the introduction of EE in schools based on the principles of sustainable development, contained in Agenda 21 (Brasil, 1999). The agenda proposed the discussion of the relationship between society and nature, the promotion of sustainable attitudes, and affirmed the a-disciplinary nature of EE. This holistic training was also included in the Tbilisi Declaration of 1977 (Declaração..., 1977). In fact, from Tbilisi to the National Environmental Education Policy, little has changed in relation to the interests involved in EE: from transforming planetary citizenship to promoting the formation of subjects who could respect the environment, nature, and the community. There is a gap, however, about the necessary depth of this transformation and the ways in which it has been subsumed by the neoliberal agenda.

Sustainability, the basis of current EE, does not meet the expectations of planetary change. It has been, on the contrary, a discourse of capital to convince the possibility of maintaining the system itself, without the need for a structural change. The creation of analytical categories regarding how much we contribute to the depletion of nature, such as the concept of the ecological footprint<sup>7</sup>, seems to move much more towards blaming the individual, regarding his contribution to the environmental crisis, than clarifying the unsustainability of the modes of production, which the individual, inclusive, cannot escape. Blaming the consumer figure seems to be an easier way to distribute – and dilute – losses and responsibilities – the externalization of capitalism is also present here. While some have greater purchasing power, and may, perhaps, consume in an *ecologically correct* way, others not only cannot escape traditional consumerism, but often pay the price of pollution generated by the mode of production.

It also seems opportune to note how education in its multiple potentialities, research, extension, and teaching, has sought to adapt to the UN Sustainable Development Goals (SDGs), without, however, modifying its structure, that is, remaining a bourgeois education and technique, based on the idea of nature as a resource which we access via technical knowledge. Perhaps it is possible to see a passivity and uncritical acceptance of the very formulation of these objectives, making them fit into different situations and actions, even if these little, or not at all, oppose the system that brought us to the contemporary environmental crisis. In this sense, we realize that education via SDG has used these objectives as a true menu of illusions, listing them and combining them with activities, research, and classes as if it had at hand a *checklist* that was not very strategic and critical. We believe that the “Education for Sustainable Development” itself based on the 2030 Agenda for Sustainable Development can take a similar path, if it is not critically appropriated.

EE is part of the so-called environmental field. This term used by Carvalho (2012) brings out the elements of complexity that form the present discussion about the environment. It is not just trees, animals, flowers, insects, etc., it is not just their relationship to human beings, it is about the entire biosphere. Of the planet as a whole. Faced with the environmental field, EE enters as a mediator of the educational and environmental spheres. It bridges the gap, but beyond that, it builds another world. The world of the future. The one in which we want and it is possible to live: the overcoming, according to Carvalho (2012), of the naturalist vision for the socio-environmental vision, in which the permanent interaction between the two poles is woven. It is an idea that intends to go against the grain of the civilizing process, being part of the counterculture movement (Carvalho; Steil, 2009).

For this texture to be fully realized and not just in the field of ideas, we must admit that we live in risk societies (Beck, 2011). We assume the risk of using chemicals that are harmful to us and the environment; We assume the risk of cars, noisy and polluting machines, geneti-

cally modified foods, *fast food*, cell phones, tobacco use, overwork, and physical and mental exhaustion. By understanding that we are trapped in this disastrous situation of flirting with danger on a daily basis, we may be able to pave the way for EE as something relevant in the educational process.

It is a long way back to human origins. Origins in the broad sense, of breaking the tacit modern agreement, as Latour (2004) would say, when trying to separate society and nature, science and politics, civilization and barbarism. This is nothing more than the constitution of a new type of human being, guided by what Jacobi (2005) called “environmental citizenship” and what Carvalho (2012) considered an “ecological subject”. For Jacobi (2005), the real entry of environmental issues into the economic and developmental debate institutionalizes decisions on the development of environmental problems. EE, in this case, would serve to create awareness and political praxis, allowing a reflective focus on citizens, criticism, and political bias, through pedagogical activities and interdisciplinary educational themes.

EA and its results do not exactly pervade the developmental theme. The “ecological subject” initially foresees the individualization of the environmental crisis, something that changes “ways of seeing the world and the human experience” (Carvalho, 2012, p. 26). It is the individual’s conception of a fair and sustainable world, thus providing an expanded citizenship. The formation of this subject would be conditioned, therefore, to modification in the field of mentalities. It is the constitution of an ecological ideology, resulting from an environmentally oriented behavior based on beliefs in environmental values. For this, it would be necessary an EE that works with the experiences of identification and subjectivization, promoting a deep social and individual learning. In fact, it is to provoke “[...] affective sensibilities and cognitive abilities” (Carvalho, 2012, p. 79) for reading the world from the perspective of the environment, based on a critical understanding of scientific knowledge that led us to “naturalize” the relations of domination, control, and subjection with the natural world. We must learn *from* the environment and not just *about* it.

This would lead us, according to Carvalho (2012), to form an ethical attitude, whether new or forgotten, capable of taking the blame for past choices, the risks assumed and carried out in society – pollution, disease, genocide of non-humans, etc. –, the collective responsibilities towards the natural world. The proposal is to break with a naive conception of EE and assume its ability to transform the individual and society as a whole. This also implies breaking with the neoliberal logic, representing not only a positive change in the subject, but its relocation in society, in the community, and consequently, within the natural world.

We believe, however, that we can take longer flights if we adopt a critical perspective in relation to the call of the Anthropocene. In its origin, this term is related to a proposition of some scientists to rename the current geological era (Crutzen; Stoermer, 2000). For them, there is more than enough evidence to determine humanity as a force of nature,

if not since the so-called Industrial Revolution, definitely since 1950, with the exponential growth in socioeconomic trends and terrestrial systems. These are, in the first case, the indices of world population, urban population, energy use, water use, telecommunications, transport, etc. In the second, data relating to stratospheric ozone, ocean acidification, surface temperatures, shrinking rainforest, other gases such as methane and nitrous oxide, and various other factors (Steffen et al., 2015). These clues have led these scientists to propose that humanity has the ability to alter the planet's natural cycles, and thus leave its marks on the current period. We left the Holocene and entered headlong into the Anthropocene (Steffen et al., 2015).

The notion of Anthropocene for EE is significant. First, by scientifically demarcating the moment when this type of educational practice becomes necessary. EE is relevant when the human being becomes a destructive force on the planet itself and palliative measures are no longer enough. The Anthropocene can be understood as revealing human experiences and the capitalist order in its choices in the past related to the natural world. This catastrophic perspective invites us to look back at the planet as our home, in its entirety, and thus assume our greater identity, proposed by Latour (2014), as *Earthbounds* or Terranos. It is about rejecting modernity, modern thinking and all the illusions that they brought, such as the promises of capitalism, of progress and material well-being for all human beings. To do so is also to completely abandon the neoliberal agenda.

The market as a social organizer and individualization served to characterize the daily life that gave rise to the Anthropocene, since they have been precisely the drivers of its intensification, together with massive industrialization and the attainment of stratospheric profits by large financial conglomerates and rentiers. In fact, there is no other planet! We don't have the option to move out if we don't like the neighborhood anymore. The split between society and culture, consolidated by capitalism, brought with it innumerable comforts, but also a break in expectations for the future. For Latour (2014, p. 14), the Anthropocene is a call to arms, "a state of war".

The social production of ignorance or "agnotology", as Latour (2014) put it, shows how maintaining the scientific uncertainties arising even in the Holocene has been a good business. The complexity of the sciences, which have been invited to think about the Anthropocene or climate change, have sometimes undermined the syntactic capacity of scientific explanation. It seems possible to us to think, in this sense, from the point of view of post-normal science (Funtowicz; Ravetz, 1997), which perceives physics and other sciences precisely in terms of uncertainty, very different from Newtonian physics, based on the visible world. As *technical progress* has not fulfilled its promises of a perfect society with its flying cars, it is even expected that the neoliberal vision has turned its back on the sciences that brought us here. However, it is an interesting movement: if in the 1970s it was the progressive sectors that rose up against the consequences of a problematic technological

modernization and, in a certain way, against science, now it is the right-wing movements, neoliberal in essence, that question science when it shows the perverse evidence of the Anthropocene/capitalism. Isn't it emblematic of the fact that the hyper-individualized neoliberalism embodied in "life coaches" empties the complexity and uncertainty of science, making it a box of ready and easy answers to anyone who wants to successfully participate in the system?

It seems unfair to us to think that what we have left is just learning to live in the Anthropocene, just recognizing that the scientific arena is built on top of the polis. Thinking about what is to come could be a way of recognizing the political role *of* science and *in* science.

A new relationship with the planet is only possible through transforming instruments, such as EE. If education is an action to redefine the world for individuals and communities, environmental education, in accepting our interactions between species, is a way of changing the place of each one on the planet. The instrumental, obviously, cannot come from the neoliberal agenda. EE is transformative only if it is free to act as a means and not as an end in the educational process towards a different future, in which the Anthropocene is just an unfashionable word.

Neoliberal thought recognizes the role of education for society: liberating and disciplining. Freedom in the discourse, as the fabrication of free subjects to make their choices, but who, in reality, are trapped by market rationality, the logic of competitiveness and the competitive need to survive by themselves in the business world. Disciplining, by using education in the same process of manufacturing subjects, but subjectively building the individual of interest to the market. There is no emancipatory education in neoliberal thinking. One of the only possibilities for forming a truly emancipating citizenship is in EE, as long as it is prepared to critically analyze the Anthropocene, and more specifically capitalism as a whole. It is the recognition of the socio-environmental crisis, the abandonment of reparative measures, the need to recover, rebuild, recompose, and even revolutionize!

In this sense, EE must show society that the choice to live under the aegis of risk cannot be another parameter of existence or subsistence, when we think that the majority of the human population lives under conditions of social, economic, environmental, and political risk. In many cases there is no choice to exist, people just subsist within the capitalist system. Again, we turn to Beck (2011), when he tells us that societies in the 20th century can be characterized by their acceptance of the risks arising, mainly, from industrial production. Faced with the promise of comfort, this acceptance has left countless catastrophes, for example, Cubatão, *Chernobyl*, *Three Mile Island*, Goiânia, Vietnam, etc..<sup>8</sup> It is necessary that EE practices break the barriers of prescriptive activities. Reduce, reuse, and recycle may well be accompanied by *reflect, respect and hold accountable, revolutionize*: reflect on human actions on the planet, respect and understand differences and other forms



of life, and hold accountable the adoption of practices that are offensive to earthly life.

EE also needs to abandon remedial measures. *We will continue producing as before, but now ecologically, in a sustainable way*, as the big industries would say. Breaking this cycle of destruction and dispossession means replacing it with solidary economic chains that meet immediate human and non-human interests, in the long term, with the maintenance of a habitable planet for future generations.

For decades, possibilities for new economic relations have been discussed. Sachs (1986) proposed that the ecological cycle should serve as a model for the economic system. Alier (2007) saw it as a possibility that the ecologism of the poor gave birth to an ethics for social justice and human rights; an ecological economy capable of a systemic view of the relations between the economy and the environment, from a point of view of social metabolism. In this regard, EE is of paramount importance, for disclosing and showing that the current measures are not transformative enough and that alternatives to the way of life and the market exist and are viable.

EE must also be based on rethinking the Anthropocene pedagogical instruments to propose ways of rebuilding the world devastated by the capitalist system. It seems evident to us that no attempt at recovery is possible within any neoliberal proposal, since, at the same time that this proposal sells us promising horizons, it offers us new and daring forms of depletion, robbery and informalization of work, life, and social relationships (Antunes, 2018). It means, therefore, sticking to the utopia of a world freed from a system that does not want the freedom of the world. To decline from this possible alternative world is to accept that the only future is the monotonous and illusory position of human beings throwing into fireplaces the objects that for years appeased their needs and promised them a world full of possibilities.

## Final Considerations

Daily we throw objects and more objects into the fireplace, real or figurative. The productive system delivers objects to the market that are increasingly fetishized and less and less characterized by durability. Even social relationships can be understood as short-lived goods, quick loves, fleeting friendships. The speed of human connections, the narrowness of emotions and moral ethics are hallmarks of the new human societies built under the edifice of the neoliberal pact. We not only live in a liquid world, but also a consumable one (Bauman, 2004; 2008).

There is an immediate and growing identification between consumption and waste generation (Bauman, 2008), apparent in both *Little Inferno* and in a considerable part of the consumer society engendered across the planet. The destination of all merchandise produced in the world is, evidently, the sale to buyers, who consume it right away. But buyers only *desire* the goods to consume if the act of consumption is something that somehow promises to satisfy their desires. This is a phe-



nomenon of interest mainly because, already in the early 1980s, the idea was specifically discussed that the capitalist system could only maintain itself because it was capable of creating people's adherence to its essence: consumption without limits. Adhesion is not passivity, but the result of two elements that have been immensely combined in contemporary times: necessity, a creation that is not natural, and authority, with an alleged technical knowledge that sees, creates, and allows everything (Castoriadis; Cohn-Bendit, 1981).

When a consumer goes out in search of satisfying his needs, he will be willing to pay for the goods the amount that corresponds to the credibility of a promise made to him. This promise is also proportional to the intensity of desires brought by the consumer. (Bauman, 2008). A game like *Little Inferno* – monotonous, with poor *storytelling*, with repetitive activities inserted in a collapsed world with no perspectives – seems to have been a reason for success precisely because the generation that plays it can feel that way. In the society of consumers that Bauman (2008) brought to light, no one becomes a subject before becoming the commodity itself. Thousands of players sitting passively in their expensive *gaming* chairs, sipping an ice cold soda and alternating between the myriad of social networks in which they participate and a game in which the future is burned may also indicate that the very system that denies them the future makes their illusion a commodity. Disillusionment, in this way, is transformed into a new commodity to sell other illusions. No person inserted in the consumer society manages to establish his subjectivity without reviving, resurrecting and perpetually recharging the capacities expected and required of a salable commodity – a process that Bauman (2008) calls the transformation of people into merchandise.

It is in the interest of those who want the commodity, therefore, to become a commodity – salable, desired. The act of shopping is an effective and immediate way to do this. But every need created – because it is not natural – is ephemeral, because the strategy is precisely this: among the many ways that consumer society finds to deal with continuous dissatisfaction is to discard the objects that cause frustration. When the character of *Little Inferno* is tossing objects new and old, credit cards and piggy banks, into the fireplace, he throws in a past and a present that frustrate him. For a generation that has a discouraging scenario of the future – unemployment, environmental collapse, displacement of thousands of population waves from their places of origin, wars and threats to democracy –, nothing that they find in the past or in the present will fulfill them satisfactorily or, indicate that there may be an alternative. Past and present block your future prospects.

How to propose solutions for this delicate moment of humanity? How to prevent the breakdown of human relationships of affection and respect and revive the ability to look at the other and recognize in him an equal in which all his differences weigh? How to think – or rethink, we would say – the relationship between society and the natural world? Will we continue to adopt the practice of burning non-humans in the

fireplace? Is consumer society, omnivorous in this sense, devouring everything and everyone?

There is certainly no one solution or one set of rules to follow. The simple withdrawal of the neoliberal agenda, which at least since the 1970s has been dictating the new social and economic conformations, is no longer enough. Human beings have already taken root in individualistic, consumerist, and entrepreneurial practices, which were instilled in them by the agenda. The withdrawal must be accompanied by a profound transformation in the notion of citizenship, promoting ethical principles, accountability for their actions, and respect for what is different, in addition to promoting the political and economic emancipation of citizens. It is necessary that instead of the neoliberal agenda, practical proposals of ecological sustainability and political space are proposed to organize the relations between society and the natural world and between humans and non-humans, within the precepts of the right to life and existence. A long walk, therefore, in search of a sunny place away from the fireplace.

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## Notes

- 1 The game *Little Inferno*, on the *Steam* platform, is described as a 100% *indie* game, made by three *guys*, with no office, no distributors and no funding. More than a million copies have been sold. An effusive comment from one of the players seems to indicate not only his contentment, but also the essence of the game: “Buy, burn, earn, burn. This game may seem repetitive, but it’s NOT. You buy, burn, make combos, earn more money and tickets, buy more items to make more combos and BOOOOOOOM you find yourself addicted to playing a game as sensational as this one” (Little..., 2012).
- 2 On this discussion, see, among others, Neves (1993).
- 3 A process that has been interpreted as the diffusion of an *imperial way of life*. The book by Ulrich Brand and Markus Wissen, recently released in Brazil, discusses this concept (Brand; Wissen, 2021).
- 4 In Brazil governed by the Workers’ Party, from 2000 to 2014, the period of Lula and Dilma, there was a readjustment of the neoliberal agenda. This continued on the economic level, but balanced by social policies. In fact, there was income redistribution allied to the formation of citizenship through consumption, one of the characteristics of the neoliberal proposal. However, the environmental issue was partially subsumed by the neoliberal agenda and large development programs required portentous works, readjustment of the forestry code, slowness in the creation of protected areas, indigenous lands, etc. See, among others, Filgueiras et al. (2012).
- 5 Note here that it is not about employment, but the ability to get a job.
- 6 Among these pieces of evidence, we can list the collapse of ecosystems, the extinction of species, the alternation between episodes of intense heat waves, storms, and floods. Furthermore, it is said that the populations that are least able to fight the consequences of climate change are precisely those that have been hardest hit and are likely to be hit even harder. After the release of the

IPCC report, then-UN Secretary-General António Guterres called it an “[...] atlas of human suffering and proof of the failure of climate leadership” (Report..., 2022).

7 The concept was created by Willam Rees and aims to account for the contrast between the consumption of natural resources by human beings and the support capacity of the environment, making it possible to compare these relationships between individuals, social classes, and countries. See more in Bursztyn and Persegona (2008).

8 The Nuclear Winter theory promoted by Carl Sagan and a few other scientists in the early 1980s is an example of a risk to all humanity that could occur at any time and without warning. The maintenance of nuclear arsenals is an obscenity of the Holocene and that must be extirpated for human survival in the future. See Colacios (2017).

## References

- ALIER, Joan Martínez. **O Ecologismo dos Pobres**: conflitos ambientais e linguagens de valoração. Tradução: Maurício Waldman. São Paulo: Contexto, 2007.
- ANDERSON, Perry. Balanço do Neoliberalismo. In: SADER, Emir; GENTILI, Pablo (Org.). **Pós-Neoliberalismo**: as políticas sociais e o Estado democrático. Rio de Janeiro: Paz e Terra, 1995. P. 9-23.
- ANTUNES, Ricardo. **O Privilégio da Servidão**: o novo proletariado de serviços na era digital. São Paulo: Boitempo, 2018.
- BAUMAN, Zygmunt. **Amor Líquido**: sobre a fragilidade dos laços humanos. Tradução: Carlos Alberto Medeiros. Rio de Janeiro: Jorge Zahar, 2004.
- BAUMAN, Zygmunt. **Vidas para Consumo**: a transformação das pessoas em mercadoria. Tradução: Carlos Alberto Medeiros. Rio de Janeiro: Zahar, 2008.
- BECK, Ulrich. **Sociedade de Risco**: rumo a uma outra modernidade. Tradução: Sebastião Nascimento. São Paulo: Editora 34, 2011.
- BRAND, Ulrich; WISSEN, Markus. **Modo de Vida Imperial**: sobre a exploração dos seres humanos e da natureza no capitalismo global. Tradução: Marcela Couto. São Paulo: Elefante, 2021.
- BRASIL. Lei nº 9.795, de 27 de abril de 1999. Dispõe sobre a educação ambiental, institui a Política Nacional de Educação Ambiental e dá outras providências. **Diário Oficial da União**, Brasília, ano 137, n. 79-E, 27 abr. 1999. Seção 1. P. 1.
- BROWN, Wendy. **Nas Ruínas do Neoliberalismo**. Tradução: Mario Marino e Eduardo Altheman Santos. São Paulo: Editora Filosófica Politeia, 2019.
- BURSZTYN, Marcel; PERSEGONA, Marcelo. **A Grande Transformação Ambiental**: uma cronologia da dialética do homem-natureza. Rio de Janeiro: Garamond, 2008.
- CARVALHO, Isabel Cristina de Moura. **Educação Ambiental**: a formação do sujeito ecológico. São Paulo: Cortez, 2012.
- CARVALHO, Isabel Cristina de Moura; STEIL, Carlos Alberto. O Habitus Ecológico e a Educação da Percepção: fundamentos antropológicos para a educação ambiental. **Educação & Realidade**, Porto Alegre, UFRGS, v. 34, n. 3, p. 81-94, 2009.
- CASTORIADIS, Cornelius; COHN-BENDIT, Daniel. **Da Ecologia à Autonomia**. Tradução: Luiz Roberto Salinas Fortes. São Paulo: Brasiliense, 1981.

- COLACIOS, Roger Domenech. **Um Clima de Incertezas**: as controvérsias científicas sobre mudanças climáticas nas revistas Science e Nature (1970-2005). São Paulo: Humanitas, 2017.
- COLACIOS, Roger Domenech; LOCASTRE, Aline Vanessa. A Ausência e o Vácuo: Educação Ambiental e a Nova Lei do Ensino Médio brasileiro no século XXI. **Revista de Educação**, Campinas, Puc-Campinas, v. 25, p. 1-15, 2020.
- CRUTZEN, Paul; STOERMER, Eugene. The “Anthropocene”. **Global Change Newsletter**, Sweden, IGBP, v. 41, p. 17-18, 2000.
- DARDOT, Pierre; LAVAL, Christian. **A Nova Razão do Mundo**: ensaio sobre a sociedade neoliberal. Tradução: Mariana Echalar. São Paulo: Boitempo, 2016.
- DECLARAÇÃO, DE TBILISI. **Conferência Intergovernamental sobre Educação Ambiental**. Tbilisi, Geórgia: UNESCO, PNUMA, v. 14, 1977.
- FILGUEIRAS, Luiz et al. O Desenvolvimento Econômico Brasileiro Recente: desindustrialização, reprimarização e doença holandesa. **Revista Desenharia**, Salvador, v. 9, p. 119-154, 2012.
- FOUCAULT, Michel. **Nascimento da Biopolítica**: curso dado no Collège de France (1978-1979). Tradução: Eduardo Brandão. São Paulo: Martins Fontes, 2008.
- FUNTOWICZ, Silvio; RAVETZ, Jerry. Ciência Pós-Normal e Comunidades Ampliadas de Pares face aos Desafios Ambientais. **História, Ciências, Saúde-Manguinhos**, Rio de Janeiro, FOC, v. 4, n. 2, p. 219-230, 1997.
- GENTILI, Pablo. Adeus à Escola Pública: a desordem neoliberal, a violência do mercado e o destino da educação das maiorias. In: GENTILI, Pablo (Org.). **Pedagogia da Exclusão**: crítica ao neoliberalismo em educação. Petrópolis: Vozes, 1995. P. 228-252.
- GRAEBER, David. **Bullshit Jobs**: a theory. New York: Simon & Schuster, 2018.
- HARVEY, David. **Breve História do Neoliberalismo**. Tradução: Adail Sobral e Maria Stela Gonçalves. São Paulo: Edições Loyola, 2005.
- HAYEK, Friedrich. **Law, Legislation and Liberty**: a new statement of the liberal principles of justice and political economy. Cornwall/Inglaterra: Routledge & Kegan Paul, 1998.
- HILL, Dave. O Neoliberalismo Global, a Resistência e a Deformação da Educação. **Currículo sem Fronteiras**, v. 3, n. 2, p. 24-59, 2003.
- HOBBSAWM, Eric. **Era dos Extremos**: o breve século XX: 1914-1991. Tradução: Marcos Santarrita. São Paulo: Companhia das Letras, 1995.
- IPCC. Intergovernmental Panel on Climate Change. Summary for Policymakers. In: PÖRTNER et al. (Ed.). **Climate Change 2022: Impacts, Adaptation and Vulnerability**. Cambridge, UK; New York, USA: Cambridge University Press, 2022. P. 3-33.
- JACOBI, Pedro Roberto. Educação Ambiental: o desafio da construção de um pensamento crítico, complexo e reflexivo. **Educação e Pesquisa**, São Paulo, USP, v. 31, n. 2, p. 233-250, 2005.
- KOSELLECK, Reinhart. **Futuro Passado**: contribuição à semântica dos tempos históricos. Tradução: Wilma Patrícia Maas e Carlos Almeida Pereira. Rio de Janeiro: Contraponto; Ed. PUC-Rio, 2006.
- LATOUR, Bruno. Políticas da Natureza: como fazer ciência na democracia. Tradução: Carlos Aurélio Mota de Souza. Bauru: Edusc, 2004.

LATOUR, Bruno. Para distinguir Amigos e Inimigos no Tempo do Antropoceno. Tradução: Renato Sztutman. *Revista de Antropologia*, São Paulo, USP, v. 57, n. 1, p. 11-31, 2014.

LITTLE inferno. Desenvolvimento e distribuição: Tomorrow Corporation. Washington: Valve Corporation, 2012. Disponível em: [https://store.steampowered.com/app/221260/Little\\_Inferno/](https://store.steampowered.com/app/221260/Little_Inferno/). Acesso em: 10 jan. 2022.

LOUREIRO, Carlos Frederico Bernardo. Educação Ambiental e Epistemologia Crítica. **REMEA – Revista Eletrônica do Mestrado em Educação Ambiental**, Rio Grande, FURG, v. 32, n. 2, p. 159-176, 2015.

LOUREIRO, Carlos Frederico Bernardo; LAYRARGUES, Philippe Pomier. Ecologia Política, Justiça e Educação Ambiental Crítica: perspectivas de aliança contra-hegemônica. **Trabalho, Educação e Saúde**, Rio de Janeiro, FOC, v. 11, n. 1, p. 53-71, 2013.

MARRACH, Sonia. Neoliberalismo e Educação. In: GUIRALDELLI, Paulo (Org.). **Infância, Educação e Neoliberalismo**. São Paulo: Cortez, 1996. P. 42-56.

MARTINS, Victor de Oliveira; ARAUJO, Alana Ramos. Crise Educacional e Ambiental em Paulo Freire e Enrique Leff: por uma pedagogia ambiental crítica. **Educação & Realidade**, Porto Alegre, UFRGS, v. 46, n. 2, p. 1-21, 2021.

MELNIKOV, Aleksandr. **A Estrutura de Classe dos Estados Unidos**. Tradução: Geraldo Guimarães. Rio de Janeiro: Civilização Brasileira, 1978.

MÉSZÁROS, István. **A Crise Estrutural do Capital**. Tradução: Francisco Raul Cornejo et al. São Paulo: Boitempo, 2011.

NEVES, Paula Cals. **Educação ou Adestramento Ambiental?** 1993. 228 f. Dissertação (Mestrado em Educação) – Centro de Ciências da Educação, Universidade Federal de Santa Catarina, Florianópolis, 1993.

RELATÓRIO do IPCC prova “o fracasso da liderança global sobre o clima”. **ONU News**, 28 fev. 2022. Disponível em: <https://news.un.org/pt/story/2022/02/1781142>. Acesso em: 2 dez. 2022.

SACHS, Ignacy. **Ecodesenvolvimento: crescer sem destruir**. Tradução: Eneida Araújo. São Paulo: Vértice, 1986.

SACHS, Ignacy. **Rumo à Ecosocioeconomia: teoria e prática do desenvolvimento**. São Paulo: Cortez, 2007.

SASSEN, Saskia. **Expulsões: brutalidade e complexidade na economia global**. Tradução: Angélica Freitas. Rio de Janeiro: Paz e Terra, 2016.

STEFFEN, Will et al. The Trajectory of the Anthropocene: The Great Acceleration. **The Anthropocene Review**, v. 2, n.1, p. 1-18, 2015.

VEIGA-NETO, Alfredo. Educação e Governamentalidade Neoliberal: novos dispositivos, novas subjetividades. In: PORTOCARRERO, Vera; BRANCO, Guilherme Castelo (Org.). **Retratos de Foucault**. Rio de Janeiro: Nau, 2000. P. 179-217.

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