Crisis of utopias and the four justices: ecologies, epistemologies and social emancipation for reinventing public health

Marcelo Firpo de Souza Porto (https://orcid.org/0000-0002-9007-0584)¹

about the health crisis within a broader crisis of utopias and the need to reinvent social emancipation that can show us realistic paths of hope from the present. For this purpose, we propose the association of four types of justice: social, health, environmental and cognitive. The two first ones are well known in critical thinking and collective health, and the last two extend the understanding of the crisis in its civilizing, ethical, and planetary aspects, marked by the contradictions and destructive potential of Eurocentric, Western and capitalist modernity. The social is considered inseparable from the ecological, ontological, and epistemological dimensions in the interface between ethics, politics, science and social transformation related to the various crises and the necessary civilizational transition. The article is based on contributions from three fields of knowledge: collective health, political ecology and postcolonial approaches, especially the Epistemologies of the South, as presented by Boaventura de Sousa Santos around the reinvention of social emancipation. Finally, we propose some brief reflections for collective health to produce alternatives on topics such as economic, scientific and technological development, health promotion, surveillance, and care.

Abstract The article proposes a reinterpretation

Key words Social crisis, Collective health, Environmental justice, Cognitive justice, Epistemologies of the South

¹ Núcleo Ecologias, Epistemologias e Promoção Emancipatória da Saúde (Neepes), Escola Nacional de Saúde Pública Sérgio Arouca, Fiocruz. R. Leopoldo Bulhões 1480, Manguinhos. 21041-210 Rio de Janeiro RJ Brasil. mfirpo2@gmail.com 4450

A Brief Introduction: The Four Justices in the Reinvention of Emancipation

The aim of this article is to develop the rereading of the contemporary crisis, understood in our proposal in its multiple dimensions – social, ecological, economic and democratic – as a crisis of emancipatory social utopias for justice, which include social struggles for health. The current moment of intensification of several crises brings to light a set of uncertainties, interpretation gaps and dystopias that make it necessary for us to reinvent the sense of emancipation in the articulation with emerging social struggles that indicate future pathways.

We propose, in the present article, a rereading of the crisis from the articulation between four dimensions of justice that expand the notion of emancipation and highlight ecological, epistemological and ontological dimensions. They are: social, health, environmental and cognitive justice. The two first ones are well known in the Public Health area.

The search for social justice is part of the utopias of the modern world that have guided the main emancipatory struggles in the last two centuries. Health justice stems from social justice, since social struggles for better living and working conditions, the construction and expansion of access to health care systems and health promotion and prevention practices have always been and continue to be present in the social struggles and achievements of different regions and countries. The context of Latin-American social medicine and Brazilian collective health^{1,2}, present since the 1970s, expresses the updating of these struggles on the continent in a historical context of opposing military dictatorships and the dependent capitalism. In theory, such struggles converged on the analysis of health inequalities and on the theory of social determination of health-disease processes influenced by social and human sciences. In Brazil, the health reform movement and the public Brazilian Universal Health System (Sistema Único de Saúde - SUS), with all its limitations and contradictions, have made important progress in addressing social inequalities in health, but are now undergoing a clear setback.

Collective health tends to analyze social and health inequalities as arising from the contradictions of the capitalist system. In this reading key, the disputes and correlations of forces that identify certain circumstances may, at any given moment, aggravate or reduce inequalities due to the organization of society and the actions of the State, although the political spectrum and proposed actions may vary, depending on more reformist or revolutionary positions. However, the contemporary crisis at different spatial scales (local, national, regional and planetary) presents challenges that go beyond the analytical bases prioritized to date by collective health, restricted to the struggles for social and health justice.

To further the current challenges, we incorporated two other types of justice, the environmental and cognitive ones, which broaden the theoretical (and also the methodological) scope to understand the health crisis within a broader civilizational crisis, not only just political and economic in character, but also of the senses and possibilities of emancipation.

The text, written as an essay, results from a long trajectory of research and actions that resulted in the recent creation of the Ecologies, Epistemologies and Emancipatory Health Promotion Nucleus (Neepes- Núcleo Ecologias, Epistemologias e Promoção Emancipatória da Saúde) linked to ENSP/Fiocruz³. Neepes aims to develop interdisciplinary knowledges, sensitive collaborative methodologies and intercultural dialogues that can support the social struggles for health, dignity and territorial rights in countryside and cities. The theoretical, methodological and pedagogical framework of Neepes results from the meeting of three fields of knowledge: collective health; political ecology⁴ based on ecological economics, critical geography, environmental sociology and anthropology; and postcolonial approaches, especially the epistemologies of the South⁵. It summarizes the work of sociologist Boaventura de Sousa Santos on the reinvention of social emancipation when facing a broader civilizing crisis of modernity that articulates three axes of domination, capitalism, colonialism and patriarchy, which mainly affect the peoples of the Global South. This is understood as a metaphor for the suffering of peoples and populations radically excluded due to their ontological condition, whether indigenous, black, women and LGBTQI+ communities. Their struggles are those of resistance against different types of violence, but also of re-existence for the acknowledgement of other ways of being, living, knowing, producing and relating in society and with nature. From our proposed view, the ethical and epistemological challenge lies in the dialogue between science and other traditional, community and popular knowledges. This implies a sensitive and engaged meeting between multiple languages and scientific, artistic, poetic-musical and popular narratives that integrate reason and affection as the ethical basis for intercultural dialogue.

The article is organized as follows: subsequently, we discuss characteristics and challenges of social justice in the current crisis. Then, we expand the ecological and epistemological dimensions that are associated to the meaning of environmental and cognitive justice. Finally, we present a brief reflection on agendas and possibilities for the public health field.

Social justice and the current crisis as a crisis of utopias

Since the 19th century, political economy has analyzed the interrelationship between economic, social and historical processes aimed at the modern utopia of a comfortable, long and pleasurable life. Two main utopian conceptions have been developed since then⁶, both based on the belief in the emancipatory potential provided by science and technology, by the continuous increase in productivity and the increasing level of society'sorganization.

The first one is the liberal utopia, based on the creative capacity of technological innovation, private property, and the free functioning of supply and demand forces that define the market with their "invisible hands" that would avoid chaos. The second one is the socialist utopia, originally based on nineteenth-century social struggles and the writings of Karl Marx, which recognized the evolutionary potential of the development of productive forces by capitalism. However, unlike the liberal view, it assumed the chaotic character of the market and the inequalities in the distribution of produced wealth, of which contradictions would be faced by the antagonistic power struggle between two great social classes that identify the conflict between the capital and labor. On the one hand, the bourgeois and ruling social classes, favored with the appropriation of the means of production and wealth, which hegemonically impose economic, political and cultural processes of domination. On the other hand, the working class, exploited and subordinated in the processes of production of surplus value, whose contradictions and emancipatory struggles have shaped the class struggle at a given historical and geopolitical moment in the construction of socialism. Whether from a revolutionary or reformist perspective, the socialist utopia assumes the construction of societies characterized by the collective control of the means of production and the wide redistribution of wealth that would result in fuller, longer and more creative lives.

Therefore, for several authors of critical social sciences influenced by political economy and the works of Karl Marx⁷⁻⁹, the contemporary crisis is inherent to capitalism. This is due to the unstable nature of the conflicts that oppose their objectives of expansion and accumulation to the conditions that support them, be it work, social reproduction, nature, politics and their institutions.

Both the liberal and socialist utopias developed and confronted each other throughout the 20th century, with different political and economic processes that shaped the several conceptions and arrangements of State, Law, democracy, and relations between countries or National States. The agreements between countries and the emergence of international organizations were strongly marked by the two World Wars of the 20th century, with the latter ending with the remarkable episode of the nuclear bombs dropped in Japan, which, for the first time in history, made modern technology a risk for the destruction of civilization. We will return to this point later.

The end of World War II marked the tense bipolar division of the world between the US-hegemonized capitalist bloc, accompanied by Western Europe and Japan, and the Soviet-Union hegemonized socialist bloc, accompanied by China and Eastern Europe. As stated by Boaventura Santos¹⁰, the twentieth century started with the dispute of two great utopias, the liberal and the socialist ones, and the twenty-first century began with a profound crisis of both and several ongoing dystopias. These have grown in the wake of several crises - political, economic, democratic and of values - and have disseminated in the void of new utopias, as they serve as dreams or guides that lead the emancipatory social transformations. Thus, to recognize the utopian crisis implies a commitment to the reinvention of social emancipation, of which health and ecology are two of the central components related to life and well-being. To reinvent the emancipation means strengthening the hopes for other and better futures, pointing to concrete alternatives to reverse the several crises that have been getting worse in recent decades.

The fall of the Berlin Wall and the end of the Soviet Union, with the strong insertion of the Chinese economic power of socialist and state origin into the global capitalist logic, bring for the first time in post-Soviet modernity the pri-

macy of the large-scale capitalist model as the only alternative for economic and social development. This allowed the foundations of neoliberal thinking developed after World War II to expand rapidly without borders since the 1990s. The neoliberal ideology expresses the current hegemonic phase of financial capitalism, and was constructed by political, business, and academic groups, whose biggest symbol is the Chicago School of economics. Naomi Klein¹¹ shows how neoliberalism was previously experienced under specific conditions of crisis and violence, such as the Pinochet dictatorship in Chile, before it came to power in the 1980s with the election of Ronald Reagan in the USA and Margaret Thatcher in England.

At least two dimensions can be highlighted in the ongoing social justice crisis: (i) the *economic*, related to rising unemployment rates, the concentration of political and economic power in the hands of the wealthier classes, large transnational corporations and the financial capital now circulating without borders or restrictions in the global market; (ii) *political* and *democratic*, related to the incapacity of the State (Executive, Legislative and Judiciary) to defend several social and human rights recognized after World War II, being restrained to a single thinking by the market and media forces.

The political crisis expresses the weakening of representative democracies that favors economic power and reduces the direct participation of citizens and organizations that classically work for social justice, such as labor unions. Some authors, since the 1990s, have been warning against the neoliberal processes that lead to the annulment of politics¹⁰⁻¹², replaced by technocratic and totalitarian decision-making processes, which allowed the expansion of information manipulation types supplied by the hegemonic media and, in recent years, by the social networks.

We highlight two analytical dimensions about the current crisis of social justice from American intellectual critics. For David Harvey⁹, the current crisis reflects three contradictions of capitalism: the *fundamental* ones, present at any time or place where capitalism is hegemonic, such as private property, capital, and labor; the *changeable* ones, which adapt to the circumstances and characteristics in which it operates, such as technology, disposability of labor, degrees of competition, inequality, geopolitics, natural resources, freedom and domination; and, finally, the *dangerous* ones, those that have the potential to bring capitalism to an end, such as infinite growth, its relationship with nature, and universal alienation. From this perspective, the current crisis would express a widening of dangerous contradictions, with its frightening side being the thin line between the end of capitalism and the end of humanity itself and nature as we know it.

The other dimension is that worked by Nancy Fraser⁸, when dealing with questions that worry the Left regarding the risks of postmodern cultural relativism and consequent social alienation. Just like the vast majority of contemporary social scientists, Fraser recognizes the relevance and emancipatory characteristic of new social movements, such as the anti-racism, feminism, LGBTQI+ movements, and ethnic groups mainly present in the Global South. However, for Fraser several movements of the so-called "new Left" tended to progressively move away from the critique of capitalism and the challenge would imply overcoming the dualism between the political/economic and the cultural aspects. The pathway would go through an analytical and pragmatic work on the borders between economy and politics, production and reproduction, society and nature.

The answer this article provides to the challenges posed by both dimensions corresponds to environmental and cognitive justice as a strategy for reinventing emancipation.

Ecological crisis and environmental justice: economic development, commodification and the destruction of life

Although eco-Marxist authors such as O'Connor¹³ and Foster¹⁴ have indicated, as Marx had already predicted in his works, the metabolic disruption of capitalist economies, only in recent decades theoreticians linked to both liberal and critical thinking started todedicate their attention to the meaning and severity of the ecological crisis¹⁵.

Among them, Nikolas Georgescu-Roegen stands out, considered the main precursor of ecological economics¹⁶, which differs from the environmental economics based on neoclassical economics. In his post-World War II works, he stated that the sustainability of any economy should confront its processes of production and consumption with the laws of thermodynamics and the ecological processes of nature's equilibrium that support life¹⁷. The modern economy and industry of the last two centuries, based on the continuous extraction of natural resources and non-renewable energy sources, gener-

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ated an unsustainable social metabolism. This would result in the expansion of disorganizing entropic processes of life, as opposed to the syntropic or negentropic ones that build, organize and regenerate life, which would affect different cycles related to the soil, water, air and climate, affecting ecosystems at local and planetary scales. Extractivism and non-circular consumption of finite-based and high-polluting materials and energies would increase the entropic potential.

In the mid-1970s, Georgescu-Roegen¹⁷ indicated two economic sectors as the main enemies of environmental sustainability. The first is the weapons industry, the greatest symbol of science and technology at the service of destruction and death. Its purpose is to increase the capacity to eliminate and/or control opponents in conflict situations. Modern warfare technologies aimed at mass destruction materialized into the chemical weapons of World War I and the nuclear bomb at the end of World War II. The possibility of a nuclear hecatomb inaugurated, for the first time in human history, the awareness that the short-term destruction of living conditions on the planet would be possible through a widespread conflict with the use of war technology. This led to an anti-nuclear pacifist movement, the precursor of ecologism, which resulted in nuclear weapons control and nonproliferation agreements. This was a paradoxical and unstable solution that is little discussed at present, supported by the attempt to limit the nuclear power of a restricted club comprising countries such as the United States, Russia, the United Kingdom, France and China.

The second economic sector is the fashion industry, actually used as a metaphor for the imposition of form upon content, of exacerbated consumerism expressed in the programmed obsolescence at the service of profit rather than life. Both sectors, together with the enormous power acquired by financial capital in recent decades, articulate and radicalize an ethics and aesthetics of the ecological crisis and modern dehumanization. It is now becoming clear that the ecological tragedy does not need a nuclear hecatomb; it only needs to follow the unsustainable divorce between economic, scientific and technological development with nature.

It becomes increasingly evident, despite the several scientific controversies and narrative disputes, the acknowledgement of the ecological crisis, of the associated disasters and global ecological risks, whether they be global warming caused by the greenhouse effect gases such as fossil fuels; polluting industries and technologies and their effects on water, soil, air and food; the reduction of biodiversity and destruction of ecosystems; and the water crisis in several cities and regions, among others. The concept of planetary boundaries¹⁸ indicates that some of these risks would have already extrapolated the limits of irreversibility, with anecological crisis scenario that will persist in the coming centuries, which justifies the idea of the Anthropocene¹⁹, or even the Capitalocene.

Beyond the narrower view of ecology, the concept of *environmental justice* incorporates the contributions of political ecology related to the expansion and aggravation of environmental and territorial conflicts led, on the one hand, by economic and governmental agents promoting 'development'; whereas, on the other hand, several social subjects resist and construct alternatives through struggles that articulate communities affected by economic enterprises, social movements, and several academic, institutional partners, and environmental justice organizations that support these struggles.

The struggle for environmental justice articulate the simultaneous confrontation of social and environmental disparities²⁰. Such struggles are always part of concrete territories, with their different conceptions and disputes about their meanings, resources and alternatives, with the connection between localized territorial struggles with collective agendas and broader social movements remaining a permanent challenge. In the countryside, social movements linked to indigenous peoples, quilombolas, peasants and fishermen, with the important presence of feminist movements, fight against agribusiness, mining, the construction of hydroelectric dams and infrastructure. At the same time, they propose alternatives related to environmental protection, agrarian reform and agroecology, demarcation of indigenous lands and quilombolas, among others. In the cities, movements originating from the urban peripheries and slums question the exclusionary, racist and undemocratic city that demarcates unsanitary sacrifice zones and transforms social policy housing into global market financial assets²¹. They propose alternatives for the building of inclusive, democratic, plural, sustainable and healthy cities.

The environmental conflicts and environmental justice movements face, on the one hand, the development model and the concept of progress. A critical socioenvironmental approach²² questions the hegemonic development

model that has expanded in Brazil in recent decades. The notion of development has two sides that coexist in a paradoxical or complementary manner, aggravating the ecological crisis and environmental injustices with palliative solutions, such as the "green economy". On the one hand, neo-developmentalism related to the pursuit of economic growth, job creation, GDP growth and fiscal balance; on the other hand, the neoextractivism focused on the exploitation of natural resources and production of commodities for the global market, which explains the reprimarization of the economy. In the case of Brazil, this results in the expansion of agribusiness with its large monocultures, and mining activity that destroys ecosystems to exploit finite deposits. Hence, they reduce the importance of other sectors with greater potential to generate added value, more sustainable socioeconomic cycles and with less environmental impacts.

The struggles for environmental justice also understand that environmental inequalities and conflicts are related not only to social class issues but also include racial, ethnic and gender dimensions. This allows the ecological issue to be articulated with environmental racism against blacks, indigenous peoples, other peoples and ethnic groups, or even violence against women.

Environmental justice movements form a broad mosaic of possibilities and orientations, depending on how the developmental model criticism and racial, ethnic, and gender issues are incorporated, and oftentimes they establish important bridges with the fourth justice that completes our proposal, i.e., cognitive justice, which will be discussed below.

Cognitive Justice: the irreducibility of the ontological and epistemological dimensions for social emancipation

Cognitive justice has its theoretical and political origins in the so-called postcolonial approaches comprising a broad and diverse set of authors from Asia, Africa and Latin America²³. In our proposal, the idea of cognitive justice complements and complexifies the three previous types of justice, providing the basis for the construction of a new utopia that can confront, in an articulate manner, the capitalism, colonialism, racism and violence that generate radical exclusions. At the same time, cognitive justice highlights the limits of modern science and its need to be confronted through dialogues between different systems of knowledge that can contribute to a more sustainable, equitable and democratic world.

Our view of cognitive justice relies heavily on the experience of cooperation with the CES/ University of Coimbra, whose Director, Boaventura de Sousa Santos, systematizes his work in the proposition of the Epistemologies of the South⁵. His main contribution is to rethink alternatives for social emancipation, while confronting the three axes of domination - capitalism, colonialism and patriarchy. Several social struggles are unarticulated, and the main challenge of the reinvention of utopias is to overcome the fragmentation of the struggles of the several oppressed social groups, whether they are workers, blacks, indigenous people, peasants, women and LGBTQI+ communities.

All postcolonial approaches are based on at least two perspectives. First, the criticism of the imposition of the Eurocentric, Western, and capitalist modernity as superior to the existing alternatives in the so-called Global South. This is a metaphor for the set of peoples and regions that are in the periphery of the capitalist world-system²⁴ that continue to suffer the effects of colonialism, even with the end of the colonies. Their worldviews and knowledges are considered primitive and disposable, or at best as subjective and exotic cultural, artistic and religious expressions.

The second perspective indicates the inseparable relationship between the ontological dimensions (expressions of the human being, either the one that promotes or degrades humanity), epistemological (expressions of knowledge, which in modern societies result in the conception of scientific superiority due to its claim of universality, objectivity and neutrality) and politics (expressions of power, either through domination or emancipation). Even recognizing its important role, modern and western science is questioned regarding its attachment to the processes of capitalist domination and the exclusion of other knowledge. The postcolonial approaches open a wide range for deconstructions and alternatives for social struggles to incorporate the epistemological dimension and indicate new possibilities and processes of emancipation, copresence and coexistence, which have been called by different names, such as decolonization of knowledge and of power, and decolonial turn²³. In its original proposal by the Indian sociologist Shiv Visvanathan²⁵, cognitive justice sought to analyze the destructive consequences of the hegemonic Western science over countries considered to be "undeveloped", of which worldviews, cultures, and knowledges are seen as barriers to modernity and development.

The systems of knowledges of the Global South are outside the paradigms recognized by the mainstream epistemology, being treated as 'common sense', ignorance, backwardness, superstition or myth, although they are deeply linked to the senses of community existence at different dimensions. For instance, there is plenty of unscientific knowledges related to conceptions, philosophies and practices involving nature, work, means of subsistence, social and interpersonal relationships, health and spirituality. Therefore, the proposal of cognitive justice can be assumed as the search for recognition, legitimacy and the right to coexist of the enormous variety of knowledge systems that exist among different peoples and cultures. This search implies the criticism of the dominant paradigm of modern science that assumes itself as superior and sole criterion of truth, rejecting and making other knowledge systems invisible.

Cognitive justice has been incorporated as one of the fundamental concepts of the epistemologies of the South, together with others such as the abyssal line, ecology of knowledges, intercultural translation, sociologies of absences and emergencies. In the book that bears this name⁵, the epistemologies of the South are presented as:

[...] a set of epistemological interventions that denounce the suppression of knowledges carried out over the last centuries by the dominant epistemological norm, value the knowledge that has successfully resisted it and the reflections it has produced and investigate the conditions of a horizontal dialogue between these knowledges. This dialogue between knowledges we call ecologies of knowledge. (Santos and Meneses⁵)

The radical exclusions assumed by the epistemologies of the South are not restricted to the redistributive struggles of wealth generated by economic, scientific, and technological "progress," as well as access to universal rights. This perspective, present in the hegemonic conception of social justice, has shown to be insufficient and has made it impossible to understand or face intolerance and economic, symbolic, gender, cultural or religious violences that have proliferated in Brazil and worldwide.

The struggles for cognitive justice seek to make evident and recognize subjects, experiences, histories, knowledges and cultures of indigenous peoples, blacks/quilombolas, peasant women, women, LGBTQI+ communities, urban periphery dwellers, among others. To do that, cognitive justice carries another component, that of historical justice, which implies the recognition not only of the knowledges and modes of existence of the radically excluded peoples. It means recognizing the rights of populations and peoples slaughtered in the past and in the present, so that during this process, the repressed feelings against the injustices are released. This collective energy of liberation is vital to the tolerance necessary for dialogue that builds bridges between the past and the future, without falling into the insurmountable polarization between the modern and the ancestral or traditional, which is reflected in the exclusionary mismatch between the knowledges.

Brief notes to decolonize and reinvent the emancipation in public health

Throughout the article we sought to demonstrate how the articulation between the four justices opens up a range of interpretations and possibilities of new agendas and actions to face the current and multifaceted social crisis. To conclude, we briefly present some questions so that collective health, as proposed by the Brazilian sanitarian Sergio Arouca, can pursue its civilizing, political and academic project. We believe the incorporation of environmental and cognitive justice brings strategic elements for the construction of new emancipatory agendas, without denying the main commitments made by the achievements of health reform and SUS.

Since 2016, we have been writing articles that incorporate ecological and epistemological dimensions that expand the connections and alternatives for collective health based on the struggle for environmental and cognitive justice. For instance, for health surveillance in questioning the development and regulation model based on the risk concept²⁶; for the construction of sensitive collaborative methodologies that incorporate artistic, poetic and popular languages into the dialogue with science for social transformation²⁷; the implications for the environmental and workers' health areas in the understanding of industrial disasters, considering the radical exclusions against blacks, women and the poor²⁸; and the proposition of an emancipatory promotion for health based on the struggles in the cities (slums, the homeless and periphery dwellers) and in the countryside (peasants, indigenous people, quilombolas and other traditional populations)²⁹.

The proposal of the integration of the four justices allows supporting different conceptions

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and practices of health from the perspectives of the Global South, whether in the care, assistance, planning, promotion, prevention and surveillance in their inseparable relationship with life, nature, the environment, culture, the State, democracy, economy, justice and the territory. For that purpose, it is necessary to overcome barriers imposed by the biomedical knowledge, of which technologies considered universal are guided by the medicalization and subordination to the financial-medical-hospital capital, disregarding other knowledges and practices. These include holistic, integrative and complementary therapies; indigenous and rural health knowledges and practices; advances in psychiatric reform and primary care in their relationship to the humanization processes, including several artistic expressions that humanize and increase the capacity of involving excluded individuals.

Georgescu-Roegen¹⁶ observed about half a century ago in the construction of the ecological economy, something that several Eastern and Indigenous traditional sages had been warning of as a major threat since the invasion of their territories by the Western civilizations with their economies, technologies, and weapons. It is the breakup with nature and with the concept of spirituality of several cosmologies considered primitive and backward by modernity. For these sages, the advent of modernity would result in the destruction of rivers, forests, animals and, ultimately, of humanity itself. This era seems to have arrived with the Anthropocene¹⁹, and the construction of new utopias with the resignification of social emancipation has the challenge of realigning the thread lost through the divorce between economy, technoscience, nature, and society.

Although despised by the materialistic science, the pragmatic spirituality of different peoples is the basis of the wisdom that produces meanings and builds bridges between the outer and the inner sides, the immanent and the transcendent, the thought and the affection. It is a continuation of the emancipatory thinking of Paulo Freire³⁰ and Orlando Fals-Borda³¹, incorporating epistemological dimensions in its relationship with life, ecology, health and spirituality. This should imply an opening for the reinvention of social emancipation to establish a dialogue with the perceptive, affective and cultural elements and experiences present in countless societies of the Global South.

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