

Ecopedagogy: educating for a new eco-social intercultural perspective

Stefan Krasimirov Grigorov*
Reinaldo Matias Fleuri**

Abstract

The purpose of this research paper is to explore Ecopedagogy in Brazil, USA and Europe as an international educational project born of the necessities of the New Millennium for transforming the globalized "World Risk Society", produced by the capitalist neo-liberal systems of global domination towards an alternative ecological and social civilization. Ecopedagogy seeks the possibility of the creation of a new ecologically sustainable civilization and see it in the fundamental, democratic and planetary reconstruction of educational systems. This research, focused on Paulo Freire's post-colonialist epistemological perspective, argues that life itself and its future(s), more than ever, depend now on humanizing and transforming education. It poses the problems of cultural and educational liberation and explores the emancipatory opportunities interculturalism offers. The research will provide a broad interdisciplinary and comparative approach to the study of Ecopedagogy as a new phase of the development of environmental and social theories and movements and will contribute for its advance as a planetary educational project for a "New Eco-social Civilization". In addition, the outcomes of the research will offer significant and applicable knowledge for transforming education in the directions of ecological sustainability, social responsibility and interculturalism.

Keywords: Ecopedagogy, Education, Cultural Liberation, Interculturality, Social Movements.

1 THE GLOBALIZATION OF ONE-DIMENSIONAL MAN AND TOTAL RISK CAPITALISM: A PRELUDE TO ECOPEDEGOGY

In 1964, Herbert Marcuse wrote "One-Dimensional Man", one of the principle works that has inspired the revolutionary movements of the 60s and 70s. He argued that the advanced industrial civilization created a "society without opposition", characterized by prevailing technological rationality and paralysis of criticism.

* Possui Graduação em Ciência Política pela Sofia University "St. Kliment Ohridski", Bulgária; Mestrado em Sociologia e Pesquisa Social, pela Università degli Studi di Trento, Itália; Especialização como "Formador dos Formadores sobre os Fundamentos das Políticas de Crescimento Verde", pelas Comissão Econômica e Social para a Ásia-Pacífico das Nações Unidas e Asian Institute of Technology; entre suas obras com influência internacional são "Let Education Save the Earth!" e "International Handbook of Ecopedagogy for Students, Educators and Parents. A Project for a New Eco-Sustainable Civilization"; fundador e presidente do Centro Búlgaro para o Desenvolvimento Local Sustentável e Ecopedagogia; st.grigorov@gmail.com; president@bcside.org
** Doutor em Educação e Pós-doutor pela Università degli Studi di Perugia, Itália, pela Universidade de São Paulo e pela Universidade Federal Fluminense; Professor Titular da Universidade Federal de Santa Catarina até 2011; Professor Visitante Nacional Sênior (Capes) com o Instituto Federal Catarinense desde 2012; coordena o Grupo de Pesquisa: Educação Intercultural e Movimentos Sociais (UFSC/CNPq); fleuri@pq.cnpq.br

For Marcuse, this is a way of life that emerges as a pattern of one-dimensional thought and behavior in which ideas, aspirations, and objectives are all reduced to the realm of consumerism. The final product is “one-dimensional” type of person whose life is organized around “*false needs*” – needs that are artificially created by Mass media in order for people to buy products they will never otherwise buy and do things they will never otherwise do. Marcuse saw the creation and commercialization of “false needs” as a new form of control over individuals, based on one-dimensional universe of information, thoughts and behavior (MARCUSE, 1968).

Today, almost 50 years later, we live in a globalized epoch of over-consumerism and experience its predominant form of rationality: the cultural hegemony of what Marcuse described as “One-Dimensional Man”. It is the time of a world risk society of market irresponsibility and impunity, “a world at risk”, where profit is generated at the top of social classes while risks appear at the bottom. “Those who enjoy the benefits of risks are not the ones who have to bear the costs.” (BECK, 2009, p. 6). As the critical educator Antonia Darder writes:

[...] the planet faces some of the most horrendous forms of “man-made” devastation ever known to humankind. Cataclysmic “natural disasters” in the last decade have sung the environmental hymns of planetary imbalance and reckless environmental disregard. A striking feature of this ecological crisis, both locally and globally, is the overwhelming concentration of wealth held by the ruling elite and their agents of capital. This environmental malaise is characterized by the staggering loss of livelihood among working people everywhere; gross inequalities in educational opportunities; an absence of health care for millions; an unprecedented number of people living behind bars; and trillions spent on fabricated wars fundamentally tied to the control and domination of the planet’s resources.” (DARDER, 2010, p. 11).

Humanity enters into a new phase of the expansion of corporate and military capitalist globalization that transforms and often devastates Earth’s geography, Earth’s climate, Natural life and biodiversity, humane forms of social organization and social relations as well as human beings, their minds and bodies. It is a form of top-down globalization of hi-tech capitalism that represents a threat to the integrity and the ecology of Earth and all forms of natural life. This is why we call this new phenomenon “Total Risk Capitalism”. Among its main characteristics stay:

- a) Hardline technocratic and anthropocentric standpoint, expressed in the *privatization*, subordination, commercialization and devastation of Nature and systems of natural life. Hard challenge in this direction is the global biotechnology competition to genetically modify, clone, *patent* and control life and its future (SHIVA, 2002, 2005);

- b) Extreme exploitation and neglect for large groups of people and peoples and depriving them of their equal human value;
- c) "New totalitarianisms. Tyranny of money and tyranny of information. They are the pillars of the production of current history of globalized capitalism. Violence of money and violence of information." (SANTOS, 2000, p. 37-38).

From the perspectives of *post-colonial theory* and *post-colonial pedagogy* (SILVA, 2011, p. 62), we must search and pose the problem of the relations of power that existed between different countries in previous historical periods: relationships between those who were colonizers and those who were colonized. This perspective seeks the epistemological perspective of dominated peoples, and especially how the hegemony of oppressors was and continues to be reproduced in the culture, education, literature, language, memory and life of dominated, oppressed peoples. In 2013, "[...] the US Secretary of State John Kerry argued that "Latin America is our backyard" and added that plans are being made to change the attitude of some of these nations. The Monroe Doctrine states that if a country on the American Continent threatens or endangers the rights or property of U.S. citizens or companies, then Washington will be forced to intervene in the affairs of that country to "reorder" and to restore the rights and heritage of their citizenship and their companies." (KARPOVA, 2013). In Australia, from the last decades of the 19th century until the 1970s, the children of aboriginal peoples have been stolen by the Australian Federal and State Government agencies and church missions (PETER, 1981). This process is famous as "The Stolen Generations" or "Stolen Children". The apology of Australian government came only in 2008 and consisted in the cynical "We Say Sorry" (CREATIVE SPIRITS, 2008). Great Britain still claims the Falkland Islands its territory although they are in the South Latin American hemisphere. Most of the resources of the South are still property of western companies that outsource their risky industries exactly in the South. Indeed, the ecological and economic consequences remain for the dominated peoples that are further constrained to buy their own resources from foreign companies, even at prices higher than the international market prices. These examples only re-confirm the importance of post-colonial pedagogy and theory today, and the key role cultural hegemony plays, especially in the countries of Latin America, Asia, Africa as well as Post-Socialist States. As Robert Cox writes:

"Hegemony derives from the ways of doing and thinking of the dominant social strata of the dominant state or states insofar as these ways of doing and thinking acquire the acquiescence of the dominant social strata of other states." (COX, 1998, p. 140).

In the perspective of Antonio Gramsci, the hegemonic powers determine the personal convictions, norms and aspirations of foreign elites through keeping technological and ideological monopoly on and through the informational structure

(the media, language, music, science, education, entertainment and culture), as even technologies and products in themselves are intentionally produced as ideology that indoctrinates and manipulates. The “concept of the world” is coined through the medium of this hegemonic structure. The attempt to control the spread of information yields to maintaining a monopoly on determining the legitimacy of information. Eventually, the guaranteed production and reproduction of global universe of information and global “cosmopolitan” elite leads to its unification into “the world community” through which hegemony diffuses in all domains of culture and thought. This is the reason why Milton Santos argued that one of the salient traits of our historical period is the really despotic role of information, information represented as ideology, inserted into objects and presented as a thing (SANTOS, 2000, p. 38).

Life and future, however, cannot be just dominated, privatized and controlled. Historically, large groups of people have always united in order to resist the politics of domination and oppression. Still in the 1960s and 1970s, the movements for civil rights, the anti-war movements, the workers movements, the counter-culture movement, the anti-nuclear movement showed that there exist also other perspectives and opportunities of real life that affirm the theoretical possibility of overcoming the dominion of advanced capitalist civilization and ushering into a qualitatively different form of reality and social perspective. The protests in the 1960s have put the beginning of the first forms of global consciousness, conscience and solidarity. Today, namely *Social Movements*, and particularly these united in the World Social Forum, represent the main form of resistance to the top-down corporate-military globalization of capitalism. Grigorov views the World Social Forum as the type of organization that can grow into a new civilization founded on Planetary Peace, Cooperation and Harmony of human beings with themselves and with Nature; a civilization that is no longer based on the development of destructive technology, but on the humane potential of human beings and the very life (GRIGOROV, 2012, p.169). This liberatory perspective is further inspired by the *Human Miracles* and the *successful resistance* which more and more people from all over the planet organize in order to defend their right of life. Here are only some examples:

- a) The beginning of the New Millennium, not accidentally, was marked by one of the most heartfelt Water Wars in the history of globalized world – the *Cochabamba Water War*, in Bolivia (OLIVERA, 2008). It marked, however, the people’s victory against the World Bank and a consortium of North American, British, Italian and Spanish multinationals that have privatized the water of Cochabamba and deprived ordinary people of it, dooming them and the ecosystems that support their life to death. A war of local people against the “global systems of domination and extermination” (BEST et al., 2011). A war for the right of water.

- b) In 2012, *Peru*, in its attempts to save biodiversity and local farmers in their fight against multinationals as Monsanto, Bayer, and Dow, imposed 10-year ban on the cultivation and importation of Genetically Modified Organisms (GMOs). The ban happened due to the pressure of more than 6000 people in six Qeswa communities: Sacaca, Chawaytire, Pampallaqta, Paru Paru and Amaru who united in "*Parque de la Papao*" to preserve their right of life.
- c) In 2012, tens of thousands of *Bulgarians*, led by the Bulgarian youth and mothers with children in more than 25 cities in the country marched against the plans of Bulgarian government to allow the North American company Chevron to produce "shale gas" in Bulgaria and to apply the catastrophic method of "*Hydraulic fracturing*" (fracking) in the most fruitful Bulgarian land "Dobrudzha". Bulgarian government was constrained to impose a Moratorium on "hydraulic fracturing"; in a similar way it banned under a great social pressure in 2010 the GMOs.

All these examples create real futures and possibilities of a Better Possible World and constitute the type of the context that defines the essence of "What Ecopedagogy is?".

2 WHAT IS ECOPELAGOGY? BRIEF HISTORICAL AND COMPARATIVE ANALYSIS

Ecopedagogy stems from real problems, contradictions and perspectives of life. It emerges as a multidimensional and planetary project whose roots can be found in the South and the First Earth Summit in Rio de Janeiro, Brazil in 1992. As Moacir Gadotti writes, it represents a pedagogical, social and political movement, a curricular approach and an integral project for a New Civilization that embraces an "Earth's paradigm" contrasting to the profound anthropocentric paradigm of thought, culture, education, economy, politics, life and future which western man and capitalist civilization try to globalize. It is a new way of perceiving life and the world, a new way of building new future. Ecopedagogy is a new pedagogy of rights that unites human rights with the rights of Earth (GADOTTI, 2005). In 2010, on the Earth Day, 22 April, the *Universal Declaration of Rights of Mother Earth*¹ was proclaimed by the World People's Conference on Climate Change and the Rights of Mother Earth, hold in *Cochabamba, Bolivia*.

Ecopedagogy is something that cannot be limited, educational and social-ecological theory and praxis of *people's action* which is in a constant process of construction and perfection because it is based on the right of life and liberty from the oppressors of the Earth who oppress it through oppressing other human beings. Its beginning can be traced in the works of Paulo Freire "Pedagogy of Oppressed" (1968), and "Pedagogy of Indignation" (2000) where an essay considering the planet Earth as a living organism that is severely oppressed was published

posthumously. Later, the idea of Ecopedagogy was undertaken by Moacir Gadotti who has written extensively on the possibility of educating and organizing for the creation of another possible world (GADOTTI, 2007, 2008a). Embracing an “Earth’s paradigm”, Gadotti theorizes Ecopedagogy as “a Pedagogy of the Earth” and develops it through the prism of sustainability viewed in an anti-hegemonic and anti-Eurocentric way (GADOTTI, 2002, 2008b, 2012). The Institute Paulo Freire, Brazil, under the guidance of Gadotti, has become one of the major centers developing diverse ecopedagogical materials and approaches.

For first time, Ecopedagogy was developed as an international planetary project by Richard Kahn who created the Ecopedagogy Association International (EAI), an academic body that united more than 40 eminent alternative scholars in order to develop counter-hegemonic forms of globalization responding to “capitalist globalization of neo-imperialism and militarism”. The Ecopedagogy of Kahn was born as a “Broad-based Pedagogy of Liberation for animals, Nature, and the Oppressed People of the Earth” (KAHN, 2008). Currently he is developing Ecopedagogy as a movement, critical pedagogy and eco-literacy theory (KAHN, 2010, 2013).

The idea of Ecopedagogy as a project for a New Eco-social Civilization was firstly structured in the “International Handbook of Ecopedagogy for Students, Educators and Parents. A Project for a New Eco-Sustainable Civilization” (GRIGOROV, 2012). It was developed with the participation of scholars, eco-politicians, activists, artists, children and students from all over the world. The Ecopedagogy handbook is based on the presumption that we do not need more business “sustainability innovations” for perfecting and sustaining the civilization of capitalism. What is needed is to offer a new vision and a project for an alternative civilization. This idea was additionally inspired by “Jogo da Carta da Terra” (INSTITUTO HARMONIA NA TERRA, 2011) – the first cooperative Ecopedagogical game that represents a practical small model of ecological and cooperative Planet sharing values different from the values of capitalism and competition. Guilherme Blauth and the other authors of the “Earth Charter Game”, united in the Institute Harmonia na Terra, Brazil, have produced considerable ecopedagogical material that includes also “Jogo da Aglo-floresta”, “De olho na vida. Encontros com a Ecopedagogia” (BLAUTH, 2008), and “Reflexões para um consumo ético” (BLAUTH; ABUHAB, 2009).

Although there exist differences in the strategy, language, methods, target groups and perspectives of Ecopedagogy in Brazil, USA and Europe, exactly these differences co-construct together the unity of Ecopedagogy as a planetary project based on *Solidarity*. In the context of the USA, the attention is centered on the Ecopedagogy Movement, offered as “an unstoppable social and environmental justice movement for a planetary transformation, where Ecopedagogy takes the form of total liberation pedagogy” (KAHN, 2010). Ecopedagogy in Europe is characterized by the use of intercultural approach and is primarily directed to critically and creatively educate children and youth and provide them with

the spirit and the capacity for organizing a revolution for new ecological, social and peaceful societies. In Brazil and internationally, as we will see in this paper, Ecopedagogy is nourished by pedagogy of liberation, post-colonial pedagogy and the traditional ecological knowledge of indigenuous peoples. The common thing in the different Ecopedagogy contexts is their participatory anti-hegemonic perspective promoting a new Earth's paradigm.

3 THEORETICAL PERSPECTIVES THAT ECOPELAGOGY EMBRACES

3.1 PEDAGOGY OF LIBERATION

From the perspective of pedagogy of liberation, educational activity starts from discussions of social and political issues and actions on the immediate social reality as it is. It seeks to discuss and analyze the emerging social problems in different communities in order to understand their determinants and promote the organization of groups for actions capable of transforming the social and political reality. The teacher, in this context, is an active coordinator who organizes and operates jointly with students (BRAZIL, 1997, p. 30-31).

The liberatory pedagogy has its origins in popular education movements that occurred in the late 50s and early 60s in Brazil, when they were interrupted by the military coup of 1964, and later resumed its development in the late 70s and early 80s. The movements of *Pedagogy of Liberation* and *Critical Pedagogy* are primarily referenced to Paulo Freire who became known in the 1960s with his method of adult literacy different from child pedagogy. Schematically, it can be said that Freire's method consists in three dialectical moments that are interdisciplinary intertwined:

- a) a research topic which the student and the teacher are searching in the universal vocabulary of the student and the society in which s/he lives; the words and themes of his/her biography;
- b) thematization, for which they encode and decode these issues, both seek their social significance, being aware of the world in which they live;
- c) problematization (problem-posing), in which they seek to replace the magical, mainstream concept of the world in favor of a critical view, starting from the transformation of the context in which they live (GARDOTTI, 2000, p. 101).

Considering that educational process is based on the context experienced by students, the approach of Freire seems similar to constructivist theories. However, the constructivism of Freire goes beyond research and thematization. It shows not only that anyone can learn (Piaget), but that we all know something and that [...] *the child or young person and the adult only learn when they have a life project*

where knowledge is significant for them. It is the person who learns through his own transformative action on the world (GADOTTI, 2000, p. 101-102).

In this sense, the student, in interaction with the teacher, is not only a recipient of knowledge, but also a producer of knowledge through problem-solving dialogue. The teacher should teach. He/she needs to do it. However, teaching is not just transmitting knowledge. For Freire, problem-posing education implies understanding of the challenges, conflicts, contradictions and "limit situations" of reality and social relations in which people live, so that they are challenged to organize themselves and address the problem. Thus, education is configured as a process of "*conscientization*". The conscientization is not only being aware of reality. The conscientization means not only to immerse in the reality but through critical analysis to unveil the reasons for your situation, and to become able to take a transformative action on this reality (GADOTTI, 2000, p. 103). Educational action thus consists primarily in this: to make explicit the human and social conflicts and challenge individuals and groups to interact and take action in order to overcome them. Pedagogy of liberation makes oppression and its reasons an object of reflection for the oppressed which will result in their engagement in the fight for their freedom. This is a participatory pedagogy to be made and remade (FREIRE, 1975).

3.2 POST-COLONIAL PEDAGOGY

According to Silva (2011), Pedagogy of the Oppressed anticipated what today might be called post-colonial pedagogy. The post-colonial perspective, developed mainly in literary studies, raises questions about the power relations between the countries in previous historical situations. Postcolonial theory goes back to Franz Omar Fanon (1925-1961), French-Algerian psychiatrist, philosopher and revolutionary. Born in the then French colony of Martinique, in 1952 he published the book "*Black Skin, White Masks*" and in 1961 "*The Wretched of the Earth*". The analyses made by Fanon on the colonial situation of those years are taken up by contemporary authors such as Homi Bhabha (1949-) and Paulo Freire. But it is the book *Orientalism* (1978) by Edward Said (1935-2003) that became the framework of contemporary postcolonial studies.

Post-colonialism focuses on the questions of "nationality" and "race" located at the center of the imaginary concept of the world that the West created and creates – for itself – and for the East. Postcolonial theory investigates mainly the complex relationships between economic exploitation and military occupation on the one hand, and cultural domination on the other (SILVA, 2011, p. 127). This perspective has been developed by authors such as Boaventura de Sousa Santos (1940-), Anibal Quijano (1928-), Walter D. Mignolo (William H. Wannamaker), Catherine Walsh. They seek to understand critically the historical formation of the modern world-system which was formed through the conquest of the Americas, instituted

in the colonial way of thinking based on the category of “race” which diminishes the ancestral cultures of the conquered peoples.

In America, the idea of race was a way to grant legitimacy to the relations of domination imposed by conquest; the conquered and dominated were placed in a natural situation of inferiority, also for their phenotypic traits as well as their mental and cultural differences. Thus, race became the first fundamental criterion for the distribution of world population levels, places and roles in the power structure of the new society. In other words, it became the basic mode of universal social classification of the world population (QUIJANO, 2005).

As part of the new pattern of world power – says Quijano – Europe focused on its hegemony by controlling all forms of cultural production through several transactions:

- a) firstly, white people colonized the cultural discoveries fittest for the development of capitalism and the benefit of the European center;
- b) secondly, they repressed the forms of production of knowledge of the colonized, depriving them of their intellectual heritage;
- c) thirdly, “[...] the colonized peoples were forced to learn the culture of the dominators in everything that was useful for the reproduction of domination, whether in the field of material activity, technology, and especially religion. This is the case of Judeo-Christian religiosity.” (QUIJANO, 2005).

The process of colonial domination promoted physical extermination or subjugation because of the military, economic and political need to assert oppressors culturally. The colonization process was consolidated only to the extent that the worldviews of colonized native peoples, designated as “primitive”, were converted to the European vision and “civilized” world, expressed through religion, science, and language arts, conveniently adapted to the way of cultural development of colonized populations. Hence, the importance of schools and the educational system as a factor in colonization and cultural domination was enormous. Thus the post-colonial theory has important implications for understanding and questioning the school practice today. Silva emphasizes this and poses the questions:

- a) to what extent the contemporary curriculum, despite all its transformations and metamorphoses, is still shaped by colonial epistemological heritage?
- b) to what extent the definitions of nationality and race, forged in the context of conquest and colonial expansion, still dominate the mechanisms of formation of the cultural identity and subjectivity embedded in the official curriculum?

- c) how the narratives that constitute the core of contemporary curricula continue to celebrate the sovereignty of European imperial system? (SILVA, 2011, p. 129).

3.3 INTERCULTURALISM AND TRADITIONAL ECOLOGICAL PHILOSOPHY OF ABORIGINAL PEOPLE

"There is no defense of the forest without forest peoples"
Chico Mendes

In order to create planetary solidarity and planetary networks for taking action in the name of the planet Earth and social justice, we face many challenges, but above all, this is the challenge of uniting different people together. It is not easy to touch to the culture of different people(s) that normally might look like strangers. The relationship between people(s) is a relationship between projects, proposals, meanings, actions, choices, words, feelings. Often these relationships are deeply conflicting and dramatic. The history demonstrates that many relationships between different peoples and different social groups have resulted into wars, genocides, processes of colonization and domination. Understanding the processes of intercultural relations is important not only because we need to understand the logic that leads to mutual destruction or subjugation, but because it helps us to discover the creative and dialogical possibilities and relations that can exist between groups and peoples from different cultural contexts.

In dialogue with educators from Aboriginal ethnicities, with whom Reinaldo Fleuri had the pleasure of sharing the Seminar "Ethno-cultural Borders", bearing in mind the principles set out above, Fleuri realized that they themselves have been promoting educational processes that foster intercultural interactions beyond the modern colonial view prevailing in Western society. The Amerindian societies, in general, share a worldview based on respect for Nature, as well as an educational vision that emphasizes personal autonomy and community participation.

For Kaiowá Guarani, says Eliel Benites, the world is the creation of God. Humans are the world passing and therefore must use Nature without destroying it. Such a view of Nature contrasts with the prevailing view in Western-dominated cultures where Nature is conceived as an object to be transformed, appropriated and sold as a commodity. The confrontation between these two visions of Nature in the historical process of colonization had disastrous consequences. In the case of the Guarani, they were subjugated to the beliefs of the conquistadors, lost their cultural reference and respectful relationship with the world and thereby subjected themselves to the logic of the market. In this comparison, we ask: Which is the pedagogy and the worldview of indigenous people in Brazil that supports the process of their resistance and cultural autonomy?

The testimony of Eliel Benites (Kaiowá Guarani) indicates that his people seek today to develop education "from the inside out", contrasting to the "outsi-

de - in" process of education developed by the white people. "It's like a covered spring which in order to be clear gushes water in abundance. The water that flows is reflection. It is the reflection that has the ability to rethink our long-term project: What will happen to our people in a hundred years?"

Facing the modern challenges, indigenous communities live in reserves surrounded by farms that limit and impede the practices of hunting and fishing which sustain their economic, political and cultural organization. The process of deforestation and destruction of Nature also complicates the relationship that they have had with their environment. And in order to respect the way whites relate to Nature, in the sense that they turn it into their property and merchandise, the first nations have lost their identity and autonomy. Now, says Eliel Benites, Guarani indigenous communities seek to rethink these challenges from the point of view of their group and their needs, and therefore, a critical relationship to the way of thinking of other social groups is possible, as well critical identification of mechanisms that corrupt their relationship with the world. Reflection thus constitutes a key element for understanding the relationship of the Guarani with the world.

A second very important element of the mode of formation of the native way of thinking is participation. Reflection in indigenous communities in Brazil takes place primarily through conversation and discussion in the community. Knowledge is not constituted from individual processes and formal research, as traditionally assumed in Western scientific production process. For indigenous people, knowledge is constituted through the dialogue in the community. And that implies an autonomous form of organization based on cooperation. So, aboriginal organization is incompatible with the type of political organization of state, based on political parties. This became very clear in the clashes and conflicts that happened reasonably in the electoral process which seeks not only to use the votes of indigenous, but also induces them to accept the form of political organization based on parties, contrary to their own way of understanding the process of participation and political organization.

Besides the reflection and participation, the third important dimension of the form in which indigenous people see the world is the ecological vision. The world is seen as a living being, Mother Earth, and the human being as a living part of this world. Therefore, preserving environment, caring for nature is a key condition for the survival of each person and every community. It is exactly the opposite of the predominant perspective in the capitalist mode of production which seeks to explore the land and turn it into property and its products. In Guarani's cosmology, in the words of Eliel Benites, it is inconceivable that the land can be considered as an object of possession and exchange by humans, because – "besides not going anywhere and not being transportable by humans" – the Earth has its own life. Nature sustains and controls the possibilities of life of human beings and therefore they need to care for it with respect and attention.

Between these two ways of seeing the world and the relations with the world, historically, some fields of mediation have been developed through people, language and school. There are many fields of intercultural relations that can be mediated, but two of them have been extremely confrontational, dramatic and sometimes finished tragically.

3.3.1 Religion

On the one hand, the prospect of totalitarian monotheistic fundamentalisms, encouraging conquest and proselytism, the processes of conversion and subjugation of other peoples and other religions. On the other hand, the indigenous view of religion as a practical connection, meeting and reciprocity with others. In this case, indigenous religious beliefs can be important symbolic tools and channels of interaction with other faiths and people with different cultures, especially considering the fact that indigenous beliefs are all connected with the respect to nature, contrary to monotheistic religions that are organized around the importance of human beings who treat nature and animals just as “beasts” or tools. Contrary to this, indigenous beliefs can contribute to a planetary “dialogue of civilizations”.

4 LAND USE AND MANAGEMENT OF ENVIRONMENT

In this field, the understanding of the Earth as a mother confronts the concept of the Earth as an object and means of production. Most Latin American indigenous cultures understand the Earth as a mother that protects and promotes life through a practice of giving and reciprocity. Just as nature takes care and makes human life possible, humans, by reciprocity, are invited to care for and protect Nature. Such a view runs counter the understanding of the Earth as an object of exploitation and commodity exchange. The latter vision, predominant in capitalist societies, justifies a process of predatory exploitation of environment as well as predatory exploitation of one’s own workforce from which the values that constitute private property and capital are extracted. This system, however, is now in deep crisis, along with the worldview and the ideologies that justify it.

5 EPISTEMOLOGICAL PROBLEMS ECOPEDAGOGY POSES

In line with the discussed theoretical perspectives, Ecopedagogy poses today profound challenges to the role and sense of education in the contexts of the current technological, economic, political and socio-cultural top-down globalization. This century “ascribes education a central role in every aspect of life” (KELLNER, 2003, p. 1). As Luiz F. Scheibe affirms, the challenge is today, “to formulate, courageously and creatively, new theoretical perspectives of analysis, viewed in another form, in an utopian vision, a production of knowledge that is no longer managed in conformance with the interests of capital and profit, but oriented to the

benefits of humanity: a science as a humane initiative directed to concrete human beings" (SCHEIBE, 2010, p. 16).

5.1 WHAT IS EDUCATION FOR?

*"Tyranny of information and money; a violence of information, a violence of money, new totalitarianisms!"
(Milton Santos, 2000)*

In the work *"For a Different Globalization: From One-dimensional Thought to an Universal Conscience."*,² the eminent Brazilian geographer who restructured the science of geography and offered the new paradigm of "critical geography" – Milton Santos, described a world dominated by *economization* and *monetarization* of social life and personal life. "Privatization of social life. Egoism, cynicism, corruption – competitive behaviors that characterize hegemonic actions and lack of education of a decent quality. Indisputable and unchallengeable because of the death of hope and generosity. A scientific, globalized and voluntary production of poverty." (SANTOS, 2000, p. 20, 72, 76). Paraphrasing Milton Santos, (2000, p. 38- 45), and being inspired by his critical geography, Ecopedagogy poses the problem: Has education been nowadays reduced simply to tyranny of information and money, to a violence of information that plays a really despotic role in human life; to a violence of money that turned out to be a new affluent ideology, a spring of new totalitarianisms which are being organized, reproduced and reinforced by the current systems of education?

In the conditions of World Risk Society in which states, governments, corporate and military industries not only do not resolve the problems of people but also lead humanity on the brink of fatal multidimensional crisis, on the brink of global rupture, and unregulated destruction, Ecopedagogy tries to reformulate and renew education as an exigent humanizing public power and as a world participatory democratic project that can unite students, scholars, and people everywhere to establish the beginnings of a new civilization. The problems of such "re-creation" of education as a world-humanizing project resemble the problems of Plato's heroes stranded in the cave (PLATO, 1981, p. 514-517). Closed in the cave from the early days of their life, they do not believe that there is another sunny world beyond the cave; their reason insists for them that they are mere "shadows"... as corporate culture supplies students today with the notion that they are mere shadows of capital's requirements, without substance or autonomy on their own. People of the cave deride leaving the cave itself as they have already some "status" within it, as some deride the leaving of our doomed world of exploitation, war, terror [...] when they

have at least a “career” there. At the same time, however, the new role education has to play is an objective historic process engaged with strong material forces. It is connected with the reformulation of the fundamental problems of education. Industrial, corporate education is designed to prepare students to get a job, and so provides students “referred to as customers and consumers” with the knowledge that “[...] they need to sell themselves to the highest bidder” (GIROUX, 2002), and not only to submit to the rulers, but also to reproduce in themselves their subordination.” (MARCUSE, 1969, p. 191). In contrast, the education human beings need in the New Millennium is something very different (GRIGOROV, 2009, p. 94-95).

Ecopedagogy calls us to rethink the knowledge we need. With the development of the current global trends of climate change, destruction of organic forms of farming and living, and the globalization of mega-consumer culture (WORLDWATCH INSTITUTE, 2010, 2010a), around 2020, simply said, we will need the knowledge:

- a) how to globally stop the forces destroying living systems and society;
- b) how to act in order to transform and improve our own life and community now and tomorrow;
- c) how to organize management and politics of air, water, food, forests and future which are “commons-based” and would guarantee the availability of vital natural resources to every human and non-human being in need.

Namely this is the first problem which Ecopedagogy addresses. It provides children and students of all ages with the knowledge of how to cope with the most serious contemporary and future problems, among which are the destruction of Nature – of air, water, food, forests, animals and plants; climate change; fracking (hydraulic fracturing) and geoengineering; ozone layer depletion; urban decay; the crisis of human communication; technological dependency; the protection of children who use the Internet; endless war; and many others (GRIGOROV, 2012, p. 14).

5.2 THE ROLE OF HUMAN BEINGS IN EDUCATION?

“To educate for another possible world, to educate for the emergence of what’s not yet, the not-yet, the utopian. It’s also educating to rupture, for defiance, for refusal, for saying “no”, to yelling, to dreaming of possible worlds, to facing that with human diversity there cannot be only one fair, productive and sustainable way of living. The world cannot be transformed without transforming people: changing the world and changing people are interconnected processes. Changing the world depends on us all: everyone must become aware and organize themselves.” (GADOTTI, 2012).

The second challenge that stays in the heart of Ecopedagogy is the need to rethink and re-imagine the role of students and educators and change the way they view and perceive themselves. As current observations indicate, “Many schools now serve as personal offices for corporations.” (GIROUX, 2002). It is worth considering

the degree to which education trains students in habits of industry and market fundamentalism today (PALATTELLA, 2001), as well as theorizing the structural consequences of this development. In reality, more and more, universities are being turned into commercial enterprises that treat “[...] knowledge as something to be consumed passively, taken up merely to be tasted, or legitimated outside of an engaged normative discourse.” (GIROUX, 2002).

We still see how scientists create weapons of mass destruction and privatized sciences help to annihilate people and the Earth, fatally threatening the life of this planet in the name of false needs such as money. Likewise, scholars in the social sciences routinely conceal the manifest exploitation rampant in society, as economists often try to persuade people to commodify and debase themselves in the name of profit. As such, we are living in a world risk society in which massively deadly threats are being re-produced for the primary purpose of underwriting the scientific power of the establishment (MARCUSE, 1968, p. 11; BECK, 1998) and establishing the hegemony of a globalization based on violence (SANTOS, 2000). How can a sane mind explain the Japanese governmental support to nuclear energy after the Fukushima Daiichi nuclear disaster?

We must confront this cynical thinking and the use of the loftiest human institutions for the vilest commercial projects. This is the reason why Ecopedagogy offers new forms of theorizing and organizing education that can provide educators and students with the skills and rights not to sell or surrender themselves to “[...] the most intolerable conditions and institutions.” (MARCUSE, 1968, p. 256), but rather, to change them. This is an interdisciplinary project that opposes the educational “production” of over-specialized and alienated human beings deprived of sanity and common sense, unable to experience a creative moment in life and to change their human situation by taking up collective actions in the name of “common good”. This is an intercultural project that values equally human beings and is based on the respect for all life, integrating the wisdom and the worldview of traditional cultures of all latitudes (GUTIERREZ; PRADO, 1998).

In this sense, Ecopedagogy differs from the *commercial* concept of sustainable development that brings with itself the universalization of western cultural paradigm and its colonial legacy. It poses the problem: is “sustainable development” the great new business of capitalist civilization? Doesn’t sustainable development seem more like commercial social brainwashing than critical problematization, conscientization, and taking conscious environmental and social justice actions? The Westernized mainstream version of sustainable development is often promoted as “a new form of colonization” whose ultimate end is to sustain one global unsustainable capitalist consumer civilization (PORTO-GONÇALVES, 2012) or in other words, to do more efficiently what should not be done at all (DALY, 2002). Ecopedagogy poses deep alternatives to the commercial “false solutions” of the capitalism-based sustainability (BARLOW, 2012, p. 3) offered by the First World as

a part of its strategy of globalization. As Donald Nonini writes, “[...] during the last three decades, corporations allied with Northern scientists and universities, national and regional governments, and international financial institutions (IFIs) have, through a variety of mechanisms associated with neo-liberal globalization (international treaties, adjudication tribunals, structural adjustment policies, etc.), acted to *dispossess* large proportions of the world’s population of their commons’ resources and enclose them for *profit making*.” (NONINI, 2007, p. 1-2).

6 METHODOLOGICAL ALTERNATIVES ECOPEDAGOGY OFFERS

From methodological point of view and as a curriculum, Ecopedagogy utilizes the methods of *participatory action research* and *participatory workshops* which have their roots in the alternative methodological views of Paulo Freire and Fals Borda (FREIRE, 1982; FALS BORDA, 1981). They can be used in order to build aware and healthy communities. Communities that do not depend any longer on the mega-machine of capitalism and consumerism and its cultural hegemony but are self-sufficient, conscious and able to organize themselves. Participatory action research can be presented as “a systematic investigation, with the collaboration of those affected by the issue being studied, for the purposes of education and taking action or effecting social change. The research centers on community strengths and issues and explicitly engages those who live in the community in the research process” (MINKLER, 2000, p. 192).

Methods from the field of futures studies, basically, the methods of “scenarios” and “backcasting” can be also well applied as Ecopedagogical methods. The scenario method is viewed as one of the main methods in the area of sustainability, taking into account the uncertainty of future environmental conditions and societal driving forces (DE VRIES, 2007). *It is a way of developing alternative futures* based on different combinations of assumptions, facts and trends. Scenarios provide a picture of future alternative states; illustrate how alternative policy pathways can achieve certain targets; and combine qualitative and quantitative information about the future evolution of certain problems (ALCAMO, 2001). The concept of “backcasting”, on its part, is central to a strategic approach for sustainability (THE NATURAL STEP, 2010). The method of backcasting starts with defining desirable sustainable future and then works backwards to identify policies and programs that will connect this future to the present (BRANDES; BROOKS, 2005).

Moreover, the methods of scenarios and backcasting can be used jointly within communities as a means of *direct* and *participatory democracy*. They can help people to construct together their own vision of the future and make scenarios of how to implement it. Communities in a given city may sit together and define a shared vision of a desired future. They can define a desired future for 2030 for example and then, working backwards can define a strategy how to create this fu-

ture in reality. In this way, scenarios and backsting can become an integral part of participatory action research.

The current challenge is to construct namely working ecopedagogical methods leading to transformation of the immediate social reality on which environment and planet Earth depend now. The processes of *problematization, conscientization and taking action* can be well united in the Ecopedagogical formula "Prevent – Preserve – Build". We would like to present a draft of this formula that can be further elaborated and integrated in schools and society as a whole in order to address the main problems we face today.

Prevent:

- a) pollution and privatization of air, water, forests;
- b) resource depletion, conflicts and wars;
- c) fast food, GMOs and chemical-based food;
- d) consumerism and its myths;
- e) technology dependency and PC addiction;
- f) alienation of human beings;
- g) violence and crime to nature and human beings;
- h) noise pollution;
- i) commercialization of life;
- j) all forms of assault to the earth and unequal treating of human beings.

Preserve:

- a) nature e biodiversity;
- b) cultural heritage and socio-diversity;
- c) traditional ecological knowledge;
- d) human communication and values.

Build:

Sustainable relations and structures of:

- a) ecological cities and villages;
- b) ecological agriculture;
- c) ecological energy;
- d) ecological transport;
- e) waste sorting e recycling;
- f) ecological tourism;
- g) active inclusion of disadvantaged people, minorities and children at risk;
- h) social equality and justice;
- i) culture of active sustainable lifestyle and sport;
- j) peace and humane solidarity all over the world.

Further, "It is deep love to Nature, humanity, persons and future that can be organizational force of sustainable change. Sustainable future can be only a future born of love than of fear" (BURGESS; JOHANNESSEN, 2010). A curriculum based solely on the study of the definition and/or principals of sustainability can difficultly trigger progressive ecological and socio-cultural shift. The foundation of hope, love and directly democratic action is where the real work of Ecopedagogy lies. Ecopedagogy and its methods are values-driven. Ecopedagogy is a pedagogy based on love, teaching as an act of love, rather than commercial administered activity, education as pro-life politics of liberation (DARDER, 1998, 2002).

7 CONCLUSION

The planet Earth and all forms of life it supports are more and more becoming an integral part of human history marked by the globalization of western paradigm of mega-consumerism and domination. It is oppressing the Earth by oppressing people, and is oppressing people by oppressing the Earth. That is the reason why we need a new Ecopedagogical paradigm to education and life, one that emphasizes the topic of "New Possible Worlds" developed from perspectives which are not anthropocentric, Eurocentric or "Americanized", but instead *planetary* and democratic. Perspectives that include the wisdom and the knowledge of traditional and local cultures from all over the globe. Cultures that are devoted to preservation of Natural life and not to its commercial modification or obliteration. This is the task of empowering students and society to prepare and realize new ecological and peaceful forms of human civilization. It is important now for others in the world of Academia and in the world of politics, to take up this task, and till they have their opportunity to give their contribution as human beings for the creation of a more ecological and livable future, full of Nature, Love and Sense. Life now, more than ever, is obliged to resist and revolutionize in order to survive!

Ecopedagogia: educar para uma nova perspectiva ecossocial e intercultural

Resumo

Nesse artigo pretende-se apresentar um estudo exploratório da Ecopedagogia como um projeto educacional internacional, que nasceu das necessidades do Novo Milênio para transformar a globalizada "Sociedade de Risco Mundial", produzida pelos sistemas capitalistas neoliberais de dominação global em direção a uma civilização alternativa, ecológica e social. A Ecopedagogia visa à criação de uma civilização ecologicamente sustentável, na perspectiva de reconstrução fundamental, democrática e planetária dos sistemas de educação. Esta pesquisa, focalizada na perspectiva epistemológica pós-colonialista de Paulo Freire, argumenta que a própria vida e seu(s) futuro(s) dependem agora da humanização e transformação da educação. Freire coloca os problemas da libertação cultural e educacional e explora as possibilidades emancipatórias proporcionadas pelo interculturalismo. Adotou-se abordagem

interdisciplinar e comparativa para o estudo da Ecopedagogia como uma nova fase do desenvolvimento de teorias e movimentos ambientais e sociais, no sentido de contribuir para o seu avanço como um projeto educacional planetário para uma "Nova Civilização Ecosocial". Além disso, buscou-se desenvolver um conhecimento significativo e aplicável para transformar a educação na direção da sustentabilidade ecológica, responsabilidade social e interculturalidade.

Notas explicativas:

¹ The Universal Declaration of Rights of Mother Earth is available at: <<http://pwccc.wordpress.com/programa/>>.

² The title of the book in portuguese is: "Por uma outra globalização: do pensamento único à consciência universal" (2000).

REFERENCES

ALCAMO, J. **Scenarios as tools for International Environmental Assessments**. Copenhagen: EEA, 2001.

BARLOW, M. Natureza: um ecossistema vivo do qual brota toda a vida. **INTERthesis**, Florianópolis: Ed. UFSC, v. 9, n. 1, p. 1-16, 2012.

BECK, U. Critical theory of world risk society: a cosmopolitan vision. **Constellations**, v. 16, n. 1, p. 3-22, mar. 2009.

BEST, S. et al. (Org.). **The global industrial complex: systems of domination**. Lexington: Books, 2011.

BLAUTH, G.; ABUHAB, P. **De olho na vida: reflexões para um consumo ético**. Florianópolis: Instituto Harmonia da Terra, 2009.

BLAUTH, G. **De olho na vida: encontros com a ecopedagogia**. Paulo Lopes: Instituto Harmonia da Terra, 2008.

BRANDES, O.; BROOKS, D. **The soft path for water in a nutshell**. Victoria: Ed. University of Victoria, 2005.

BRASIL. **Parâmetros curriculares nacionais: introdução aos parâmetros curriculares nacionais**. Brasília, DF: MEC/SEF, 1997.

BURGESS, D.; JOHANNESSE, T. The heart of sustainability: big ideas from the field of environmental education and their relationship to sustainability education or what's love got to do with it? **Journal of Sustainability Education**, 2010.

COX, R. Toward a post-hegemonic conceptualization of world order: reflection on the relevancy of Ibn Khaldun. In: ROSENAU, J.; CZEMPIEL, Erns-Otto. **Governance without government: order and change in world politics**. Cambridge: University Press, 1998.

CREATIVE SPIRITS. **'Sorry' apology to stolen generations**. 2008. Available in: <<http://www.creativespirits.info/aboriginalculture/politics/sorry-apology-to-stolen-generations>>. Accessed on: 11 jun. 2012.

DARDER, A. Preface. In: KAHN, R. (Ed.) **Critical pedagogy, ecoliteracy, and planetary crisis: the ecopedagogy movement**. New York: Peter Lang Publishing, Inc., 2010.

_____. **Reinventing Paulo Freire: a pedagogy of love**. New York: Westview Press, 2002.

_____. **Teaching as an act of love: in memory of Paulo Freire**. New York: Westview Press, 1998.

DALY, H. Five Policy Recommendations for a sustainable economy. In: TAYLER, Juliet B. Schorbetsy (Ed.). **Sustainable planet: solutions for the 21st century**. Boston, 2002.

DE VRIES, B. J. M. Scenarios: guidance for an uncertain and complex world? In: CONSTANZA, R.; GRAUMLICH, L.; STEFFEN, W. (Ed.). **Sustainability or collapse?: an integrated history and future of people on earth**. Massachusetts: MIT Press, p. 378-398, 2007.

FALS BORDA, O. The challenge of action research. Roma, **Development: seeds of change**, n. 1, p. 55-61, 1981.

FREIRE, P. Creating alternative research methods. Learning to do it by doing it. In: HALL, Budd; GILLETTE, Arthur; TANDON, Rajesh (Eds.). **Creating knowledge: a monopoly**. New Delhi: Society for Participatory Research in Asia, p. 29-37, 1982.

FREIRE, P. **Pedagogia do oprimido**. 3. ed. Rio de Janeiro: Paz e Terra, 1975.

GADOTTI, M. Earth's Pedagogy. In: GRIGOROV, S. (Ed.). **International handbook of ecopedagogy for students, educators and parents: a project for a new eco-sustainable civilization**. Sofia: Bulgarian Centre for Sustainable Local Development and Ecopedagogy, 2012.

_____. **Educar para a sustentabilidade**. São Paulo: Instituto Paulo Freire, 2008a.

_____. **Educar para um outro mundo possível**. São Paulo: Publisher Brasil, 2007.

_____. Education for sustainability: a critical contribution to the decade of education for sustainable development. **Green Theory & Praxis: The Journal of Ecopedagogy**, v. 4, n. 1, 2008b.

_____. **Pedagogía de la tierra**. México: Siglo XXI, 2002.

_____. **Perspectivas atuais da educação**. Porto Alegre: Artes Médicas Editora, 2000. Available in: <<http://acervo.paulofreire.org/xmlui/handle/7891/2770>>. Accessed on: 28 jan. 2013.

GIROUX, H. **The corporate war against higher education**. 2002. Available in: <<http://www.louisville.edu/journal/workplace/issue5p1/giroux.html>>. Accessed on: 28 jul. 2012.

GRIGOROV, S. (Ed.). **International handbook of ecopedagogy for students, educators and parents: a project for a new eco-sustainable civilization**. Sofia: Bulgarian Centre for Sustainable Local Development and Ecopedagogy, 2012.

_____. Let education save the earth! Towards the realization of new sustainable forms of humanistic education. **Green Theory and Praxis: The Journal of Ecopedagogy**, v. 5, n. 1, 2009.

GUTIERREZ, Francisco; PRADO, Cruz. **Ecopedagogia e cidadania planetária**. São Paulo: Cortez, 1998.

INSTITUTO HARMONIA NA TERRA. **Earth charter game**. São Paulo, 2011.

KAHN, R. **Critical Pedagogy, Ecoliteracy, and Planetary Crisis: The Ecopedagogy Movement**. New York: Peter Lang Publishing, Inc., 2010.

_____. **Ecopedagogy: educating for sustainability in schools and society**. New York: Routledge, 2013.

_____. Towards ecopedagogy: weaving a broad-based pedagogy of liberation for animals, nature, and the oppressed people of the earth. In: DARDER, A.; BALTONADO, M.; TORRES, R. (Ed.). **The critical pedagogy reader**. New York: Routledge, 2008.

KARPOVA, L. John Kerry, Secretary of State: "Latin America is our back yard". Pravda, 2013. Available in: <http://english.pravda.ru/world/americas/23-04-2013/124377-latam_backyard-0/>. Accessed on: 23 jul. 2013.

KELLNER, D. Toward a critical theory of education. **Democracy & Nature**, v. 9, n. 1, p. 51-64, 2003.

MARCUSE, H. **One-dimensional man**. Boston: Beacon Press, 1968.

MINKLER, M. Using participatory action research to build healthy communities. **Public Health Reports**, v. 115, n. 2-3, p. 191-197, mar./june 2000.

NONINI, D. M. (Org.). **The global idea of 'the commons': critical intervention series**. Oxford: Berghahn Books, 2007.

OLIVERA, O. **Cochabamba: water war in Bolivia**. Cambridge: South End Press, 2008.

PALATTELLA, J. Ivory towers in the marketplace. **Dissent**, n. 48, 2001.

Платон [PLATÃO]. 1981. **Държавата [The Republic]**. София, 1981.

PETER, R. **The stolen generations: (bringing them home) the removal of aboriginal children in new south wales 1883 to 1969**. Department of aboriginal affairs. New South Wales government, 1981.

PORTO-GONÇALVES, Carlos Walter. A ecologia política na América Latina: reapropriação social da natureza e reinvenção dos territórios. **INTERthesis**, Florianópolis: Ed. UFSC, v. 9, n. 1, p. 16-49, 2012.

QUIJANO, Anibal. Colonialidade do poder, eurocentrismo e América Latina. In: LANDER, Edgardo (Ed.). **A colonialidade do saber**: eurocentrismo e ciências sociais – perspectivas latino-americanas. Buenos Aires: CLACSO, 2005. (Colección Sur Sur).

SANTOS, M. **Por uma outra globalização do pensamento único à consciência universal**. Rio de Janeiro: Record, 2000.

SCHEIBE, L. F. A Interdisciplinaridade e os desafios das humanidades no século XXI. In: RIAL, C.; TOMIELLO, N.; RAFFAELLI, R. (Ed.). **A aventura interdisciplinar**: quinze anos de Programa de Pós-graduação Interdisciplinar em Ciências Sociais. Florianópolis: Ed. UFSC, 2010.

SHIVA, V. **Water wars**: privatization, pollution and profit. Cambridge: South End Press, 2002.

_____. **Earth democracy**: justice, sustainability and peace. Boston: South End Press, 2005.

SILVA, T. T. **Documentos de identidade**: uma introdução a teorias do currículo. Belo Horizonte: Autêntica, 2011.

THE NATURAL STEP. **The four system conditions**. 2010. Available in: <<http://www.thenaturalstep.org/en/canada/the-system-conditions>>. Accessed on: 28 jan. 2013.

WORLDWATCH INSTITUTE. **State of the World 2010. Transforming cultures**: from consumerism to sustainability. Washington, DC: The Worldwatch Institute, 2010a.

_____. **Vital Signs**: the trends that are shaping our Future. Washington, DC: The Worldwatch Institute, 2010b.