Building new frontiers: An ecosystemic approach to development, culture, education, environment and quality of life

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Quality of life, natural and man-made environments, physical, social and mental well-being are currently undermined by all sorts of hazards and injuries; political, economical, social and cultural disarray normalise atrocious behaviours and violence throughout the world. Considering the multiple problems of difficult settlement or solution in our times, current environmental, social, cultural, educational, political and economic policies and practices are examined in view of new paradigms of growth, power, wealth, work and freedom. A multidimensional ecosystemic approach and planning model for the diagnosis and prognosis of quality of life integrate into a dynamic configuration four dimensions of being-in-the- world (intimate, interactive, social and biophysical), as they induce the events (deficits and assets), cope with consequences (desired or undesired) and reorganise for change, enhancing connexions and sealing ruptures. Development and evaluation of teaching programmes, research projects and public policies benefit from a deep understanding of the events, providing a critical comprehensive four-dimensional framework and planning model for effective and responsible action.

Key-words: education; culture; public policies; environment; ecosystems

Can we imagine a world in which wise and impartial international regulators would have the necessary authority to implement the right set of norms and policies to safeguard mankind's cultural inheritance and natural and built environments, preserving esthetic and life saving values for future generations? Creating governance systems to deal with these multiple challenges constitutes one of the greatest issues of our times.

Contemporary problems are closely interconnected and interdependent, they cannot be understood and solved within the present context of weakening social bonds and cultural, political and economical frenzy, usually a generous ground for market-place's interests, publicity-oriented behaviour, "fragmented academic disciplines and government agencies" (Elohim, 2000), but extremely hazardous to values, conviviality, beauty, creativity and peace.

The conceptual direction and the legitimacy of development strategies should be examined in view of a comprehensive framework, not surrendering to specialisation and fragmentation, but promoting a multi-level approach. Different movements and civic stances should work towards a "new global covenant" (Held (2004), emphasizing social justice, physical, social and mental well-being and the equilibrium between natural and built environments.

Beyond profit motives of business corporations and embedded political interests, transboundary issues connected to public health, environmental depletion, deforestation, pollution, human rights, drugs and criminality impose a significant reconfiguration of state control and political authority, in which power must be shared in a transnational basis by a transnational authority, acting on legal and ethical grounds.

To cope with environmental collapse, environmental justice should be extended beyond national boundaries, beyond political and economical interests of malicious consortia and countries' governance "styles", more or less lenient towards non-law-abiding influential groups and questionable business organisations, which use ill-intentioned propaganda and corruption as a way to deal with private and public affairs.

Deforestation, desertification, global warming, biodiversity losses[1] and other extreme events are linked to the action of powerful economical and political interests, which try to legitimise business expansion in terms of energy or food demand by a perverse world-system, which already proved its inability to produce quality of life, reduce poverty, diminish famine, preserve the environment and forestall violence in the world[2].

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[1] Suggested causes of biodiversity losses include deforestation, pesticides, pollution, persecution, infectious disease and habitat loss due to man's tampering with nature and careless abuse of the environment.

[2] "More problematic than the need for a radically different economy would be the acceptance of some values which clash with the Western tradition, notably the present commitments to competition, individualism and acquisitiveness, and the conception of progress" (Trainer, 2001).

The role of law, the work of attorneys and judicial courts is frequently hampered by the very system in which they have their insertion. "Legal" and "illegal" strategies and methods seem very much alike in the assemblage of current political and economical interests; powerful lobbies, deeply ingrained in the public administration, which favour mega-projects with intensive use of resources, rather than the appropriate technologies to enhance overall quality of life.

Legal procedures will not forestall neither the *planned obsolescence* of products designed for the dump nor the *perceived obsolescence* fostered by propaganda induced consumerism, which, among other psychosocial strategies, arise in people the sensation that products should always be substituted by new ones, buying and disposal converted into rituals of a culture that makes consumption a way of life.

Compliance to and enforcement of not only environmental, but overall legislation, depends on the cultural and educational level of societies: environmental problems stem from the prevailing power-driven ethos, combined with anomic individualism, "which diverts human concern into technological invention, scientific advancement, and unlimited material consumption and production" (Orhan, 2003). Changing the current "world-system" is mandatory[3].

Beyond profit-searching motives of business corporations and other vested interests, transboundary issues like human rights, pollution, deforestation, drugs and criminality impose a significant reconfiguration of state control and political authority, involving a new world, in which power must be shared on ethical grounds in a transnational basis, by transnational organisations[4].

The present ecological crisis reflects a prior disordering of thought, perceptions and values (Orr, 1994), and is a sign of the severe cultural crisis of our times, which break through the core of societal institutions -- education, justice, governance – already impaired by the dominance of national and international corporate interests and the maneuvers and collusions of political and economical dominant groups[5].

Development proposals, in the name of the so-called "progress", reinforce the current way of life, asking for more resources to face an irrational system of production, transport and consumption, increasing pollution and waste[6]; technological "solutions" ignore social, cultural and environmental impacts; disregard of the precautionary principle brings harmful consequences, which could be prevented by careful and thorough integrated policy assessments.

The conventional sustainability approach, based on human-made capital and technology, cannot be a substitute for the wealth of resources drawn from the natural world. Development and affluence have degraded ecosystems: "strong sustainability entails living within the productive capacity of nature, containing population growth and curbing consumption, meeting the needs of the current generation as opposed to their demands" (Layzer, 2008).

Human scale development should be focused and based "on the satisfaction of fundamental human needs, on the generation of growing levels of self-reliance, and on the construction of organic

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[3] "A world-system is a social system, one that has boundaries, structures, member groups, rules of legitimation, and coherence. Its life is made up of the conflicting forces which hold it together by tension and tear it apart as each group seeks eternally to remold it to its advantage. It has the characteristics of an organism, in that it has a life-span over which its characteristics change in some respects and remain stable in others. One can define its structures as being at different times strong or weak in terms of the internal logic of its functioning" (Wallerstein, 1974: pp. 347-57).

[4] "Transboundary and global environmental harm present substantial challenges to state-centered (territorial) modalities of accountability and responsibility; the globalization of environmental degradation has triggered regulatory responses at various jurisdictional scales to address the so-called "accountability deficits" in global environmental politics" (Mason, 2008).

[5] Present ecological problems cannot be clearly understood or resolved without dealing with deep-seated problems within society and the structurally amoral political-economical system thst drives it (Bookchin, 1982).

[6] "Promoters of multi-billion dollar land-use development megaprojects systematically misinform parliaments, the public and the media in order to get them approved and built; they often avoid and violate established practices of good governance, transparency and participation in political and administrative decision making" (Flyvbjerg, B., Bruzelius, N. and Rothengatter,W., 2003).

articulations of people with nature and technology, of global processes with local activity, of the personal with the social, of planning with autonomy, and of civil society with the state" (Max-Neef, 1991).

Essential to personal happiness, positive social involvement and ecologically sustainable behavior, "intrinsic" goals are inherently gratifying to pursue, like self-acceptance (growing as a person), affiliation (having close, intimate relationships with others), community feeling (helping the world be a better place) – in contrast to "extrinsic" goals (like money, image and status), which are means to other (disputed) ends (Kasser & Ryan, 1996).

Growth, power, wealth, work and freedom must acquire new meanings (O' Sullivan, 1987). Concentration on the accumulation of wealth to the exclusion of other components of the development process (safety, health, justice, education, equity, ethics, beauty) has led to overwhelming natural devastation and severe social and cultural impacts in the deeply troubled today's major cities, with high levels of crime and violence[7].

The fundamental change is economic, social, cultural and political; instead of mere growth, priority should be given to sustainability, human development, order and stability in civil society: the spreading of myths that if one group gets richer, others will share in the wealth was not sufficient to forestall the overspread criminality in today's big cities, which "uses and discard people as economic building blocks" (Bown, 2007).

A process of change should deal with the prevailing political and economical interests, with the cultural and educational level of the population, with countries' governance "styles", more or less lenient with non-law-abiding influential people and questionable business corporations, which use ill-intentioned propaganda, lobbying and corruption to intensify profits in view of prevailing public policies and private affairs.

Privatisations, deregulations, sweeping market-oriented reforms, resulted in relinquishing state's control to the huge power of private sectors; in this context, new technological waves will not rescue a devastated environment, nor relieve the effects of inequities, uprootings, displacements, hunger, violence, ecological insults and deep social division in contemporary society (American Anthropological Association, 2005).

When pressures on systems steadily increase, "catastrophic bifurcation" can appear without obvious early warning signals, and the resulting changes are always difficult to reverse; understanding how such transitions come about in complex systems such as human societies, ecosystems and the climate is a major challenge (Scheffer et al., 2001).

Cultural, educational, social, economical, environmental and health problems cannot be sorted out by segmented projects; without considering micro, meso and macro relationships. Like bubbles in the surface of a boiling pot, segmented problems are symptomatic of the assemblage of political, economical, social and cultural variables that should be dealt with altogether.

The Role of Education in a Time of Cultural Crisis

Identifying complex configurations or conditions that predict particular outcomes, in terms of multiway, nonlinear interactions among variables, asks for an integrative multidisciplinary approach. What are the prospects of education as a whole, and environmental and sustainability education in particular, regarding the severe threats faced by today's world?

When the political, economical, cultural and ethical disarray normalises and condones inequities, transgressions, violence and atrocious behaviours, the "philosophical" questions of ethical, moral and overall civic education are frequently left aside, information and communication technologies being presented as a panacea, not as a resource or an instrument.

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[7] The nature, scope and implications of current events "no prior age could even have imagined" (White, 1999); scholars speak of "the suffocating political and cultural forces that blunt our response to the growing complexity of our ecological catastrophe" (Buell, 2003); of a "total risk of catastrophe" (Ewald, in Godard, O. and Long, M., 1997); of "systemic risks" (Giddens, 2001), of "global catastrophic risks" (Bostrom, 1997), and "simultaneous crisis formation" (Harvey, 2006), of a "general disaster" (Massumi, 2003), of the "worst imaginable accidents" (Beck, 2007), of "global" or "integral" accidents (Virilio and Turner, 2005), of "development as plunder" (Trainer, 2000).

Teaching for meaning in a cultural context that values only information transmission (Boostrom, 1997) is one of the main challenges for education in our times. In order to salvage the realm of character and moral development, the present ethos should not center on individual good and individual value alone, but on the environment and the public space, as a global system.

Beyond the objectivistic description of the facts or disseminating information to the public[8], the design, development, and utilization of concepts, tools and practices to enhance the quality of life must take into account the collective forms of being-in-the-world, in order to make the necessary changes in the current model of culture[9].

Advances in applied ethics should be made "by thoughtful and innovative thinkers in any activity area; specialists of several professions who work together, within a multidisciplinary approach, must base their action on some common principles of ethics and on an understanding of each others' obligations, responsibilities and professional standards" (Soskolne, 1997).

"Environmental culture is a rare blend of fierceness and tenderness; it boldly unmasks the institutional and systemic violence of our culture and reveals how our culture's life-destroying practices and ethical and spiritual bankruptcy are closely linked to our failure to situate ourselves as ecological beings" (Plumwood, 2002).

Although the practices, according to evolutionary theories of change, may be selected by the social environment rather than by individuals, it is important to consider, "as a vital part of cultural evolution" the role played by human purpose, intelligence, planning, learning, arguing, persuading, calculation, discussion, and argument (Nelson, 2005).

Preparing people to assume their positions in society, both as professionals and citizens, cannot be reduced to ritualistic actions, such as voting or paying taxes, nor can it encourage an uncritical ideological allegiance to the "free-market", transforming schools in training centers for compliant egocentric producers and consumers, instead of centers of critical inquiry.

Environmental education cannot prosper in a context of social fragmentation and weakening social bonds: creation of choices, generation of capacities, development of motivations depend on cultural, social, political and economical aspects; the quality of institutions and incentive structures are more critical than the quality of individual motives and morals (Krol, 2005).

"Education as a whole, and environmental and sustainability education in particular, are limited in their ability to make a positive difference to assure a more sustainable future" (Sterling, 2003). "Whilst environmental education in schools help to normalise environmental values, children will take cues for appropriate behaviour from the media, peer group and society as a whole" (Bedford, 2002).

Beyond environmental education, development education[10] needs the construction of a "new story for mankind", enhancing local and global citizenship, human rights and justice, supporting people to understand and transform the social, cultural, political and economic structures affecting life at personal, community, national and international levels (Irish Aid, 2007).

Peace building, acceptance of ethical norms requires a multitude of ethically interpreted and ordered social experiences, a capacity for having morally relevant interests as the bases of rights-bearing, a broad, universally rationalised cultural knowledge, an empathy with people, including those regarded as alien, or even hostile (Znaniecki, 1935).

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[8] Regarding the media, "popularizers" could draw attention to frame issues on environmentalism and culture as significant and important, by dramatization in symbolic and visual terms, emphasising different incentives for taking positive action, and getting institutional support to ensure both legitimacy and continuity in the process" (Hannigan, 1995).

[9] In order to deal with sustainable development in both environmental and cultural terms we need a theory of cultural sustainability, since the concept of sustainability implies a holistic approach to modelling economic, biological and cultural processes (Throsby, 2008).

[10] More broadly defined than "environmental education", the term "education for sustainability" (or "education for sustainable development") emerged primarily out of the Earth Summit and includes international development, economic development, cultural diversity, social and environmental equity, and human health and well-being.

Table I
Dimensions' equilibrium in the ecosystemic model of culture

Recipients	Donors			
	INTIMATE	*INTERACTIVE*	*SOCIAL*	*BIOPHYSICAL*
INTIMATE	Creativeness	Support	Services:	Vitality
INTERACTIVE	Cooperation	Cohesiveness	Diversity:	Niches
SOCIAL	Citizenship	Partnerships	Organisation	Spaces
BIOPHYSICAL	Care:	Preservation	Sustainment	Equilibrium

Table II
Dimensions' disruption in the non-ecosystemic model of culture

Victims	Inflictors			
	INTIMATE	*INTERACTIVE*	*SOCIAL*	*BIOPHYSICAL*
INTIMATE	Solypsism	Abdication	Domination	Agression
INTERACTIVE	Heteronomy	Fanaticism	Cooptation	Dispersion
SOCIAL	Subjection	Corporativism	Totalitarian	Extinction
BIOPHYSICAL	Predatory	Exploitation	Spoliation	Savageness

Table III
Intertwining the four dimensions of the world in the diagnosis and treatment of the problems

Stages of the Plan	*INTIMATE*	*INTERACTIVE*	*SOCIAL*	*BIOPHYSICAL*
Diagnosing Events	Subject's Cognitive-Affective Processes Existential Control	Dynamics and Cohesion of Groups and Communities'	Public Policies Social Structure Culture, Values	Natural and Man-Made Environments Beings and Things
Eliciting New Events	Subjects' Development Educational and Cultural Enhancing	Social Networks Groups' Strengthening Community Building	Integrative Policies Law Enactment Citizenship	Promotion of Balance Natural and Man-Made Environments
Evaluating Changes	Increased Resilience Enhanced Awareness Subjects' Well-Being	Proactive Groups and Communities Increased Participation	Well-Fare Policies Citizenship Participation	Enhancement of Natural and Man-Made Environments

Education for citizenship cannot be reduced to formal or ritualistic actions, such as voting or paying taxes, nor can it encourage an uncritical ideological allegiance to the "free-market", transforming schooling in training centers for a compliant work force, which takes for granted the perverse life style of egocentric producers and consumers.

The present United Nations decade for education for sustainable development emphasizes critical thinking and problem solving, interdisciplinary and holistic multi-method, values-driven approaches, encompassing environmental principles, social awareness, ethical dimensions, economic prudence, confidence and participatory decision-making (Lindberg, 2005).

Since universities are responsible for preparing people to assume key positions in society, both as professionals and citizens, the discussion of environmental problems should transcend traditional disciplines and national boundaries, in light of transdisciplinary research and teaching programmes[11], global perspectives and international cooperation.

Besides cross-curricula activities, environmental education demands a knowledgeable and congruent teaching and learning theoretical ground, a core element for comprehension, preparedness and action, in order to develop the "students' abilities to participate in, influence, share and control the learning process" (Tilbury et al., 2005).

The objective of educational processes is not to solve taken for granted problems, but to develop capacities to unveil and work with the dynamic and complex configurations in the core of a "boiling pot", considering individuals, groups, society and environments as donors and recipients, as active components to promote the desired quality of life[12].

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[11] "The industrial culture is rooted in an approach to the world that divides the human person into parts and the world into fragments, but the environment is one whole, it is not cut up into specialties, disciplines and departments" (Drengson, 1995).

[12] This is not only a matter of education, but of governance and societal organisation. It is generally accepted that cross-cutting programmes on sustainable development imply a worldwide change of focus and procedures in different areas of production, distribution, consumption and discard, *reducing* consumption, *reusing* products, and *recycling* materials.

Creation of choices, generation of capacities, development of motivations depend on complex configurations encompassing the four dimensions of being-in-the-world (intimate, interactive, social and biophysical), as they induce the events (deficits/assets), cope with consequences (desired/undesired) and contribute for change (Pilon, 2003; 2008).

All dimensions of being-in-the-world should be considered altogether in view of public policies and research and teaching programmes. The equilibrium (table I) or disruption (table II) between the different dimensions of being-in-the-world in the different models of culture (ecosystemic and non-ecosystemic) should be assessed in view of the desired quality of life.

Assessment of the problems and eliciting favourable changes imply the diagnosis and work with the configurations represented by the intertwining of variables linked to the four dimensions of being-in-the-world (table III). Environment and development issues will always reflect the connections and the ruptures between these dimensions.

In the socio-cultural learning niches, cultural and epistemic backgrounds and subject-object relationships should be unveiled in a specific space-time horizon of understanding, feeling and action. Analysis of assumptions, contentions, consensus and discrepancies are essential to the comprehension and definition of the problems, in view of new ways to deal with quality of life[13]

To develop awareness and capabilities beyond the traditional schemes of thought, feeling and action, subjective and objective realities should be entangled, encompassing the alien that we strive to understand and the familiar that we take for granted (Gadamer, 1977); this creates an "excess of meaning", in view of new paradigms of knowledge and action[14].

Heuristic-hermeneutic processes entail unveiling subject-object relationships (*intimate dimension*); sharing and analysis of perceptions and contentions with the participation of the group (*interactive dimension*) and action-research in the cultural and natural milieu (*social* and *biophysical dimensions*). The methodology is participatory, experiential and reflexive.

The process of change is associated with an ecosystemic model of culture[15] leading to new ways of being-in-the-world, in view of public action to transform current development policies and structures that abuse resources, destroy natural and built environments, wipe out biodiversity, demolish living-spaces and generate unmanageable refuses that menace the future of life on Earth.

Findings and policy lessons

Quality of life depend on complex configurations encompassing individuals, groups, society, natural and man-made environments; development and evaluation of public policies, community projects, research and teaching programmes should consider the interplay of the different dimensions of being-in-the-world; enhancing their connections and sealing the ruptures between them.

Ethics, education, culture, human rights, physical, social and mental well-being, citizenship, natural and man-made environments are strongly affected by the different models of culture (ecosystemic or non-ecosystemic). As by-products of the prevailing models of culture, current problems cannot be treated as separate objects of separate projects.

Preserving the singularity and dynamic equilibrium between the different dimensions of being-in-the-world is an essential condition for an effective, consistent, endurable and responsible action, in view of a holistic approach to the problems of quality of life and the paradigms of growth, power, wealth, work and freedom that affect it.

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[13].Diagnosis and prognosis of current problems must take into account the connections (assets) and ruptures (deficits) between the different dimensions of the world, as donors and recipients: *Intimate Dimension*: cognitive and affective processes, existential control, resilience, cultural and educational development; *Interactive Dimension*: social networks, community building, groups' dynamics, bounds and bindings; *Social Dimension:* political, economical, social and cultural aspects, public policies, law enactment, health, educational and environmental programmes; *Biophysical Dimension*: biological endowment, natural and built environments, life spaces, neighbourhoods and settlements.

[14] Working with phenomena (how reality appears in a specific space-time horizon of understanding, feeling and action), requires an adequate learning environment, "which is essential to moral and democratic education" (Lind, 2003).

[15] An ecosystemic model of culture takes into account the configurations formed by four dimensions of being-in-the-world (*intimate, interactive, social* and *biophysical*), as they induce the events (deficits and assets), cope with consequences (desired or undesired) and contribute for change (Pilon, 2008).

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