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Living better in a better world: an ecosystemic approach for the governance of complex systems

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15 May 2010

Online at <https://mpra.ub.uni-muenchen.de/24103/>
MPRA Paper No. 24103, posted 26 Jul 2010 10:57 UTC

Building a Better World: An Ecosystemic Approach to Education, Culture, Environment, Health and Quality of Life

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Problems of difficult settlement or solution in the contemporary world cannot be solved by segmented academic formats, market-place interests or mass-media headlines; instead of dealing with “taken for granted issues” (the apparent “bubbles” in the surface), public policies, research and teaching programmes should detect the issues and work with them deep inside the “boiling pot”. Beyond the creation of choices and the development of capacities and motivations, education, environment, health and quality of life must be embedded into and promoted by the cultural, social, political and economical institutions, which are more critical than individual motives and morals. Problems should be assessed and dealt with considering the dynamic and complex configurations intertwining, as donors and recipients, four dimensions of being-in-the-world: *intimate* (subject’s cognitive and affective processes), *interactive* (groups’ mutual support and values), *social* (political, economical and cultural systems) and *biophysical* (biological endowment, natural and man-made environments). The process of change must take into account the singularity of each dimension and their mutual support, as they combine to induce the events (deficits and assets), cope with consequences (desired or undesired) and contribute for change (diagnosis and prognosis). Development projects should be oriented to enhance the connections and seal the ruptures between the different dimensions of being-in-the-world, fostering their mutual support and dynamic equilibrium. Individuals, groups, society, natural and man-made environments should be dealt with simultaneously as a necessary condition to develop an ecosystemic model of culture. Changing the current “world-system” is mandatory, in view of new paradigms of growth, power, wealth, work and freedom (a framework for planning, implementation and evaluation of public policies, as well of research and teaching programmes, is proposed).

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

Can we imagine a world in which wise and impartial international regulators would have the authority to implement the right set of norms and policies to safeguard mankind’s cultural inheritance, natural and built environments, esthetic and life saving values for future generations? Creating transnational governance systems to deal with these multiple issues constitutes one of the greatest challenges 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 disarray, usually a generous ground for market-place’s interests, publicity-oriented behaviour, fragmented academic disciplines and misguided government policies (Elohim, 2000), but extremely hazardous to conviviality, beauty, creativity and peace.

To cope with environmental collapse, environmental justice should be extended beyond national boundaries, beyond political and economical interests of malicious consortia and corrupted or lenient governments, which easily comply to ill-intentioned propaganda and lobbying by influential groups and questionable business organisations, always wishing to control public affairs and promote their private interests.

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.

This means that the environment should be examined in view of a critical assessment of environmental information and issues from both a biological, chemical, physical as well as sociological and economic perspective, including all the aspects that affect the human development: criminality, ethics, the economy, culture, environmental law, environmental policy, environmental management tools.

Deforestation, desertification, global warming, biodiversity losses and other extreme events are linked to the action of powerful economical and political interests, which try to legitimise business expansion in terms of “development” models based on consumerism and abuse of natural resources, notwithstanding its failure to face the increasing inequalities, violence and poor quality of life throughout the world.

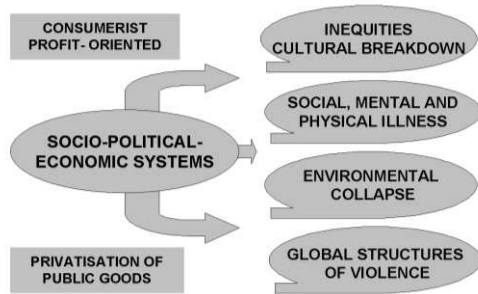


Fig. 1 The impact of current socio-political-economic systems are detrimental to the quality of life.
 Fig. 2 The real problems lay deep inside the boiling pot, not in the superficial bubbles (consequences).

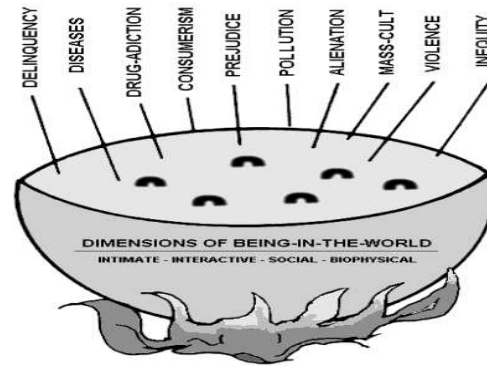


Fig. 2

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.

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 mandatory¹; the real problems should be tackled deep inside the boiling pot, they can not be solved by piercing the segmented “bubbles” in the surface (fig.s 1, 2).

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 and 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.

The traditional approach to teaching ethics do not thrive in highly corrupt societies². 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 new forms of being-in-the-world, in which power must be shared on ethical grounds in a transnational basis, by transnational organisations.

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).

¹ “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).

² “Weak public institutions and deeply entrenched networks act together to prevent accountability, funneling finance and influence along unofficial channels for the benefit of corrupt groups; political people participate in governmental processes primarily to secure and retain access to personal enrichment at the expense of the public good” (Whitton, 2009). “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).

In many problem-ridden, economically unequal and intrinsically violent urban environments, most people become uninvolved in civic life due to the outspread criminality (Baiochi, 2005). While some enjoy life in fortified enclaves, most of the city dwellers live in makeshift slum housing, without the basic social services (health, education) and dependent on criminality for survival³.

Growth, power, wealth, work and freedom must acquire new meanings (O' Sullivan, 1987). The accumulation of wealth to the exclusion of other components of the development process (safety, health, education, equity, ethics, justice, beauty) has led to overwhelming natural devastation and severe social and cultural impacts, with high levels of crime and violence⁴.

“Social inclusion” only accommodate people to the prevailing order and do not prepare them to change the system (Labonte, 2004); once “included”, a new wave of “egocentric producers and consumers” reproduce the system responsible for their former exclusion, increasing the abuse of nature in the name of the so-called “progress” and irresponsible consumerism.

Technological “solutions” must take into account the social, cultural and environmental impacts, development proposals which demand even more resources, increasing pollution and waste, reinforce the current way of life and do not change the current irrational system of production, transport and consumption that plagues the world⁵.

“Sustainability” approaches, based on capital and technology, cannot be a substitute for the wealth of resources drawn from the natural world; the so-called 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).

A proper cultural environment, a common ethical ground, is more important than the best legal prescription⁶. Human scale development must be based "on the satisfaction of fundamental human needs, on growing self-reliance, on the construction of organic 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 is linked to ecologically sustainable behavior: in contrast to “extrinsic” goals (like money, image and status), which are means to other (disputed) ends, “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) (Kasser & Ryan, 1996).

The emphasis on human rights, rather than collective political action, only reiterates individualistic approaches (Harvey, 2005). The fundamental change is economic, social, cultural and political; priority should not be given to growth, but to sustainability, human development, order and stability in civil society: if

³ “Nothing more visibly reveals the overall decay of the modern city than the ubiquitous filth and garbage in its streets, the noise and massive congestion that fills its thoroughfares, the apathy of its population toward civic issues and the ghastly indifference of the individual toward the physical violence” (Bookchin, 1979). “The more the city concentrates the necessities of life the more unlivable it becomes. The notion that happiness is possible in a city, that life there is more intense, pleasure is enhanced, and leisure time more abundant is mystification and myth” (Lefebvre, 2003).

⁴ The environment should be examined in relation to environmental law, environmental policy and environmental management tools, encompassing criminality, ethics, economy, development, psychology, culture; “quality of life, whether in the developed world or in developing societies, is conditioned by the quality of the environment being built around us by others - increasing the sense of individual alienation” (Yang, 1998).

⁵ “Private consumption at the cost of amenity and future is by no means a necessity of nature as consumption is to a large extent a cultural activity”; it is linked to the emergence of the knowledge economy, “with returns increasingly being in the form of profits instead of wages” (Huppes, 2008). “Promoters of multi-billion dollar 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).

⁶ Present ecological problems cannot be clearly understood or resolved without dealing with deep-seated problems within society and the structurally amoral political-economical system that drives it (Bookchin, 1982). 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), of “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).

one group gets richer, others can be used and discarded as mere building blocks and will not share in the wealth (Bown, 2007).

Cultural and educational public policies succumb to the prevailing political and economical interests, converting the population into consuming subjects, appropriating their thoughts and bodies and transforming them into the property (commodities) of influential people and questionable business corporations, which use propaganda, lobbying and corruption to intensify profits and secure their hegemony over public affairs⁷.

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.

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.

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 and institutional change⁸.

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).

The Ecosystemic Approach to Education, Culture and Quality of Life

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? Identifying complex configurations or conditions that predict particular outcomes asks for an integrative multidisciplinary approach, in terms of multiway, nonlinear interactions among variables.

Teaching for meaning in a cultural context that values only information transmission is one of the main challenges for education in our times (Boostrom, 1997): "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".

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).

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).

⁷ "Environmental culture 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). 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).

⁸ Institutional change is defined as "a great transformation from predominantly relationship-based regulation systems to impersonal institutions and formal rules, creating trust at systemic (vs idiosyncratic) levels and allowing huge reductions in individual marginal transactions costs; institutions for risk-sharing at a systemic level decrease individual risk and allow longer time horizons" (Meisel, 2004).

Table I
Dimensions' equilibrium in the ecosystemic model of culture

	<i>Donors</i>			
<i>Recipients</i>	INTIMATE	INTERACTIVE	SOCIAL	BIOPHYSICAL
INTIMATE	Creativity	Support	Services:	Vitality
INTERACTIVE	Altruism	Teamwork	Alliances	Niches
SOCIAL	Citizenship	Partnerships	Organisation	Spaces
BIOPHYSICAL	Care	Defence	Sustainability	Equilibrium

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

	<i>Inflictors</i>			
<i>Victims</i>	INTIMATE	INTERACTIVE	SOCIAL	BIOPHYSICAL
INTIMATE	Solipsism	Subjection	Neglect	Harm
INTERACTIVE	Egotism	Fanaticism	Co-opting	Dispersal
SOCIAL	Abuse	Corporatism	Tyranny	Extinction
BIOPHYSICAL	Injury	Damage	Spoilation	Savageness

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

<i>Stages of the Process</i>	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 Changes	Subjects' Cultural and Educational Development	Strengthening Social Networks Community Building	Integrative Policies Law Enactment Social Control	Enhancement of Natural and Man-Made Environments
Process Evaluation	Subjects' Well-Being Resilience Awareness	Proactive Groups Community Building	Social Movements Well-Fare Policies Social Trust	Equilibrium Natural and Man-Made Environments

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

Beyond the objectivistic description of facts or dissemination of information to the public⁹, 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 culture¹⁰.

“Environmental awareness is not simply awareness of the natural environment but also of social, economic, cultural and other dimensions; it requires ‘dynamic’ skills to discover and study the environment and find solutions, capacity to discern the relevant dimensions of a situation, readiness to accept responsibility, initiative taking, independence, commitment” (Hugonnier, 2008).

⁹ 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).

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, human health and well-being. 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).

Although the practices, according to evolutionary theories of change, are mainly selected by the social environment rather than by individuals¹¹, it is important to consider the role played by human purpose, intelligence, planning, learning, arguing, persuading, calculation, discussion, and argument, “as a vital part of cultural evolution” (Nelson, 2005).

Beyond environmental education, development education 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).

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 consumers¹².

As an essential condition to “moral and democratic education” (Lind, 2003) and “more problematic than the need for a radically different economy, is 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).

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 programmes¹³, global perspectives and international cooperation.

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

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).

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.

The methodology is participatory, experiential and reflexive (fig. 3); heuristic-hermeneutic processes reveal reality in a specific space-time horizon of understanding, feeling and action, unveiling subject-object perceptions and contentions (*intimate dimension*), sharing them with the participants (*interactive dimension*) and setting the ground for new paradigms for being-in-the-world (*social* and *biophysical dimensions*).

¹¹ “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). 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. This is not only a matter of education, but of governance and societal organisation.

¹² “To date, education and the media have only succeeded in fostering a culture characterized by narrow vested interests, intolerance and violence; to build a sustainable society for our children and future generations we need to fundamentally redesign many of our technologies and social institutions so as to bridge the wide gap between human design and the ecologically sustainable systems of nature” (UNESCO-EOLSS, 2008).

¹³ “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). The current problems are so complex that they require “boundary-crossing skills, such as the abilities to change perspective, to cope with complexity and to synthesize knowledge of different disciplines or areas of expertise in a critical and creative way” (Fortuin et al., 2008).

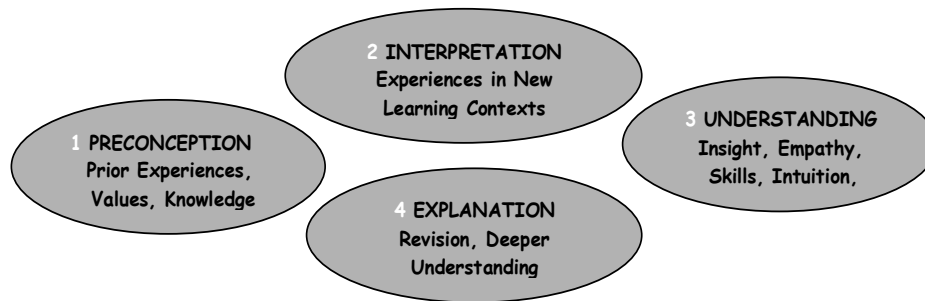


Fig. 3 From preconceptions to explanation: the heuristic-hermeneutic process in the socio-cultural learning niches.

To develop awareness and capabilities beyond the traditional schemes of thought, feeling and action, subjective and objective realities should be entangled, creating an “excess of meaning” (Gadamer, 1977) and encompassing the alien that we strive to understand and the familiar that we take for granted, a process encompassing socialisation, externalisation, combination and internalisation (Nonaka and Konno, 1998)¹⁴.

In the socio-cultural learning niches, cultural and epistemic backgrounds and subject-object relationships are unveiled in a specific space-time horizon of understanding, feeling and action. Analysis of assumptions, contentions, consensus and conflicts are essential to the comprehension and definition of the problems and new paradigms to live better in a better world¹⁵

A process of change must be associated with the development of an ecosystemic model of culture¹⁶ leading to public action to transform current development policies and structures that wipe out biodiversity, destroy natural and built environments, abuse landscapes and resources, 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, enduring and responsible action, in view of the current problems of quality of life and today’s paradigms of growth, power, wealth, work and freedom that orient social-economic-political and cultural life.

¹⁴ 1) *Socialisation*: sharing tacit knowledge (internal knowledge, skills and insights) with others by mentoring, imitation, observation and practice; 2) *Externalisation*: converting tacit knowledge into explicit knowledge, through images or words (conceptual knowledge), as a result of a dialogue; 3) *Combination*: knowledge conversion by exchanging and combining different types of explicit knowledge of different sources. 4) *Internalisation*: converting explicit knowledge into tacit knowledge in people’s minds, which is represented by mental images or models (‘learning by doing’).

¹⁵.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.

¹⁶ 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).

Acceptance of ethical norms, peace building, environmental equilibrium requires a whole host of ethically interpreted and ordered social experiences, a capacity to develop 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).

It means reorganizing to produce more of the things that people need — like food, shelter, clothing, education, security, health care — and less of the costly things we do not — like military hardware, pollution, traffic jams, useless chattels and crime. Failures in governance at many levels, and the resulting suspicion and mistrust, clearly also play a role in the current state of affairs.

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