

Introduction

Integrating Education for Social and Ecological Peace— The Educational Context

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. . . I want to point out to you my personal view of this NATO war against my country. The Balkans, and especially Serbia, Montenegro and Kosovo have been known till now as a safe part of Europe, [free] from different kinds of ecological pollution, and their economical future has been designed as producers of healthy food and different kinds of tourism. The bombing of NATO has not only destroyed any possibility for such development in the future but has also endangered the survival of the whole population. The dangerous chemical reactions and explosions caused by the bombing of oil production installations has poured hundreds and thousands of tons of oil in the rivers and fields and completely destroyed some chemical factories which produced exclusively for civilian needs (e.g. “Azotara” Pancevo, producer of fertilizer for agriculture). This is only one example of the pollution the war has caused in the region. Here we also have to include the contamination of our fields and rivers and forest by the millions of tons of explosives of different kinds, mostly with dangerous radiation which bring a great risk for health not only for the present, but for many future generations. There is data from some obstetrical clinics that the number of premature births is six times the level of the pre-war state. . . .¹

The above account details the environmental degradation caused by the NATO bombing of Serbia, a consequence of war. The bombing leaves in its wake not only human casualties, but also a degraded Earth. Moreover, the various kinds of pollution caused by the bombing will negatively affect the economy of the country, its food supply, the health and longevity of its citizens both in the present and in the future. This link between human actions that result not only

in social violence but also environmental degradation, which, in turn, leads to the further violation of human rights is dramatically illustrated in war if often ignored in the assessment of its impact.² It is also evident in nonmilitary activities, specifically unsustainable economic activities in the North, motivated by the needs of a mass consumer culture, and similarly unsustainable development projects and practices in the South, driven by a desire to emulate the lifestyle of the North and by the need to alleviate poverty created and exacerbated by a growing population and the inequitable distribution of resources. The examples that follow are representative of some of the varied dimensions of this reciprocity.

THE ESSEQUIBO RIVERIAN AREA OF GUYANA³

*Unsustainable mining practices result in a **sudden** environmental disaster which disrupts the sustainable lifestyle of the local inhabitants and exacerbates their poverty.*

On August 22, 1995, the Government of the Republic of Guyana (a country situated on the north coast of South America) declared the upper Essequibo region between the boundaries of the Omai River and the Atlantic coast an environmental disaster. The tailing dam of a gold mine had ruptured, releasing 3.2 billion liters of cyanide-injected water and wastes into a region containing immense biodiversity, including many rare and threatened species of wildlife and the site of one of the few pristine rainforests left on Earth. A number of wild animals, such as the jaguar, the agouti, and the caimana, all frequent this river to drink and bathe in it. After the incident, a number of dead animals were found washed up on the banks of the river, including domestic chickens which were fed with water from this river. While this sudden environmental disaster may have been considered an industrial accident by the mining company, in fact, it was the result of unregulated and unsustainable mining practices. Uncontrolled discharges were not always reported, nor was the company fined when an earlier "minor" incident of cyanide leaking into the river occurred. Moreover, criticisms made by non-governmental environmental specialists about the design of the mine's tailing dam, and their warnings about an impending disaster were not heeded.

Because of the degradation of the river and surrounding land, the lives of the people living in the affected region were thrown into turmoil as they battled to cope with the problems that came in the wake of the accident. They all faced the lack of potable supplies of water for daily consumption and domestic use. The fisher folk, who relied on the river for income, were now without an adequate source of income to maintain their families. Amerindians, a river community, lost

their main source of sustenance, that is, food, water, and means of travel and communication. Many residents were concerned about the long-term effects of cyanide given that it is a carcinogenic substance. In sum, contaminated as a result of human action, the river could no longer be depended upon to provide for the people's basic needs, and as a result, their basic rights to life, health, food, water, a source of income, and communication were violated.

THE ARAL SEA⁴

*Unsustainable agricultural practices cause **cumulative** environmental degradation, which, in turn, deprives local residents of the resources needed to provide for their basic human needs.*

In contrast to the sudden disaster in the Essequibo Riverian area, the degradation of the Aral Sea, the rivers, and agricultural land in its vicinity has been a cumulative process resulting from unsustainable agricultural development—an ill-planned and poorly monitored irrigation scheme and the extensive use of artificial fertilizers and pesticides. Located in a semi-arid region of south-central Asia, in the 1950s the Aral Sea covered an area of 66,000 square kilometers with a mean depth of 16 meters. Its waters were fresh with a mean salinity of 1% to 1.1%. The water from two large rivers, the Amu Darya and the Syr Darya, flowed into the sea and together with the annual rainfall, maintained the volume and level of water in the sea. However, since the early 1960s, a few years after the irrigation scheme was put into operation, the irrigated agricultural land expanded rapidly reducing the flow of the water into the Aral Sea to approximately 13% of its pre-1960 total. As a result, by 1990 the sea had shrunk to about 55% of its original area and had become two separate lakes. Its total water volume had dropped to less than one third of its 1950s volume, and the salinity of its waters had increased from a mean of 1/1.1% to about 3%.

The decrease in water flow and the increase in salinity led to a decrease in the size of the Aral Sea. It is gradually disappearing. While the Sea once contained more than 20 species of fish, now all but a few have died as shallow spawning grounds have dried up. Food reserves have disappeared, and commercial fishing, which used to be a productive economic activity when the sea produced over 40 million kilograms of fish a year, has practically stopped. Without the moderating influence of the vast expanse of the original sea, climate in the area has become more extreme. Rainfall has decreased, while summers have become shorter and warmer, and frosts are now more likely to occur later in spring and earlier in the fall. As a result, there are no longer enough frost-free days in the year for growing cotton, once the main

crop of the Amu Darya Delta. Forests on either side of the sea have dried up; bird and mammal species have disappeared. The salinity of the agricultural land has increased and its fertility decreased as salt from the exposed sea bed is spread by storm and as water from the inefficient irrigation system evaporates causing crop-damaging salts to accumulate. The water used by farmers to wash these salts out of the soil enters the rivers and ultimately increases the salinization of the areas downstream and the Aral Sea itself. The extensive use of artificial fertilizers and chemical pesticides to support production of the two main crops, rice and cotton, has also polluted the water that drains back into the Amu Darya and the Syr Darya with high concentrations of phosphates and nitrates as well as chemical pesticides.

Thus, affected by a chain of events initiated by human decisions to implement unsustainable agricultural practices, the degraded sea and rivers, the changed climate, and the polluted land threaten the well-being of the population. They are deprived of the sources of their livelihood—fishing, cotton growing, and fertile land for agriculture—with the consequent incapacity to provide for the basic needs of their families. The accumulation of toxic chemicals in the river is now contaminating local supplies of drinking water, and since 1975, people living in the area have begun to suffer from a number of serious health problems. The incidence of typhoid fever, hepatitis, kidney disease, and others have increased. Babies are born weak and ailing. In the city of Karalpakia, for example, the 1989 mortality rate for children was among the highest in the world. Thus, the benefits people of the region should derive from their basic rights to a source of income, food and water, to good health, and even to life are denied.

WESTERN UNITED STATES: A GRASSHOPPER INVASION⁵

Unsustainable agricultural activities gradually result in the degradation of basic environmental processes which, in turn, pose a threat to farmers' source of income and a source of the country's food supply. This (threat) leads to human action that brings more harm to the environment and as a result, further threatens the farmers' livelihood and the quality of the food supply.

In the summer of 2002, states west of the Mississippi suffered from the largest grasshopper invasion since World War II. Grass, crops, and pastures were ravaged by the pests, with as many as two hundred grasshoppers per square yard ultimately reaching up to one million grasshoppers per acre, each one capable of eating more than half its body weight per day.

To deal with this threat to the farmers' source of income and one source of the country's food supply, large amounts of money were invested in pesticides

though with limited effects as the grasshoppers adapt and resist. Besides, the pesticides pose long-term risks by disrupting Nature's balance. They kill many beneficial insects, including the natural predators that might destroy the grasshoppers, thus requiring the use of more or different pesticides when they (the grasshoppers) reappear, or when the next major pest appears from the shadows. Pesticides also pollute the land, water, and air. Eventually these toxins move up the food chain and, ultimately, threaten human health.

Global warming, brought about by the use of fossil fuels for human activities and by the consequent emission of CO₂ and other greenhouse gases, is primarily responsible for the northern migration of pests, the threat they pose to the country's right to food, and a farmer's right to a source of income. To cope with the threat, the government provides financial support for pesticides, which further degrade the environment by polluting the land, water, and air and so places at risk the population's right to an uncontaminated food supply and to good health. The pesticides also destroy natural predators leaving the crops vulnerable to future attacks by similar or different pests. Thus, the cycle of social and ecological violence is fueled and maintained.

DEFORESTATION IN NEPAL⁶

Unsustainable agricultural practices motivated by people's need to subsist result in a gradual process of environmental degradation which, by exacerbating poverty, leads to further environmental damage and the consequent threat to the source of livelihood of the local inhabitants.

In the hill regions of Nepal, where available agricultural technology to improve farming in the more fertile lowland soils is scarce, Nepalese farmers cannot maintain their incomes as the population increases and farms become smaller. To subsist, they are forced to clear and crop the hillsides, the less productive lands. This exacerbates soil erosion which causes flooding and the concomitant pollution of the more fertile lowlands, thus forcing people to destroy more of the forested areas in an effort to survive. In fact, between the late 1960s and early 1980s, the area under agricultural production expanded from between 15% and 35% while forested areas in Nepal's hills decreased from between 40% to 55%, and depending on the specific location, to 60% of the total area.

Because Nepal's forests have been pushed so far back from rural populations, it takes an average of 1.4 hours more each day for women to collect firewood and fodder than it did a decade ago. These extra hours spent collecting firewood are taken from women's work in agricultural production and reduces the total

farm labor by as much as 24% per household and so, lowers overall household productivity. The decrease in agricultural productivity caused by deforestation has also reduced food consumption on average more than 100 calories per capita per day. Time for food preparation and child care has been lost, furthering the decline in nutrition, especially for children. Because expanded planting on hillsides shifts cropping patterns away from rice and other high quality calorie sources, the nutritional content of the family diets is reduced even more.

A result of the local people's efforts to subsist in the face of an increase in population and a decrease in agricultural land, deforestation exacerbates their poverty and further encroaches on their right to a basic livelihood. Thus frustrated, the farmers place added pressure on the forest, and, as in the case of the grasshopper plague, the cycle of ecological and social violence is intensified.

In sum, it appears that the underside of environmental degradation is the violation of human rights. Humans bring harm to the Earth by their economic activities thus limiting her ability to provide adequately for their basic needs. As a result, they are prevented from enjoying what their rights allow and are led to further damage Earth systems. This damage, in a cycle-like fashion, further encroaches on their quality of life and may even threaten their survival. In other words, it may be concluded that since the Earth is the primary context and essential foundation of all social activity, a comprehensive social peace can neither be achieved nor sustained if Earth rights are not respected. Conversely, a society which allows humans to benefit equitably from what their rights allow is essential if ecological sustainability is to be achieved.

By now there is an emerging agreement about the social causes of environmental degradation, and the impact of such human action on the environment has been documented and categorized, for example, reduction of biological diversity, deforestation, depletion of natural resources, climate change, desertification. Similarly, the causes of varied forms of social violence and the effects of this violence on human quality of life are recognized. However, the reciprocity between ecological violence and social violence is not frequently made explicit in assessments of their separate impacts and in policy statements that aim to deal with this harm. Nor is this link a topic of common concern. Yet it is this dynamic between the two which intensifies their impact and maintains their existence and as a consequence, inhibits the achievement of their converse, that is, ecological and social peace.

This reciprocity between the violation of Earth rights and human rights presents a challenge to educational institutions, whose task it is to inform students about and prepare them to cope with and even remedy social and environmental problems. Of special relevance is the response to this challenge of peace education and environmental education, two educational specializations whose task it is to respond, respectively, to social violence and ecological violence. To

what extent is there a recognition within these two fields of the link between social and environmental crises? Has awareness of the social consequences of environmental degradation changed the manner in which peace educators understand their task? Has it influenced the development of their curricula? The same questions can be asked of environmental educators regarding the ecological consequences of physical and structural forms of violence. For insights into these questions, it is necessary to turn to the literature in both fields where selected writings, dating back to the early 1980s, do in fact reveal an emerging recognition of the link between environmental integrity and social peace among a critical core of peace and environmental educators.

PEACE EDUCATION

Early developments in peace education were shaped by the notion of peace as the absence of war and by the threat of nuclear war among superpowers. Nuclear education assumed that the arms race would lead to a nuclear war, and efforts were centered on informing the public about its possibilities and catastrophic effects. Disarmament education, a second earlier development, took a comprehensive view of the arms race and extended its educational efforts to the abolition of both nuclear and conventional weapons, thus questioning the viability of war as a social institution. The recognition that even when there is no war, if social institutions condone and encourage injustice, discrimination, violation of human rights of individuals or groups, then there can be no peace (Galtung, 1964) led to new developments in peace education in the 1980s. A distinction was made between education for negative peace, directed towards organized physical violence, and education for positive peace, directed towards structural violence and ecocide, which recognized the environment as a living ecological system that can be the victim or object of violence (Reardon, 1988).

Thus, starting in the early 1980s, literature in the field of peace education evidenced an awareness of the destructive impact of human activities on the Earth. This was reflected in theoretical discussions on the definition of peace and on the link between social and ecological peace/violence and in curricular writings, specifically conceptual models that are foundational to curriculum development and the learning goals and objectives proposed to shape the curriculum.

Definition of Peace

As the definition of peace began to be extended beyond the notion of negative peace, that is, the absence of war, the harm wrought upon earth systems by

human activities was also recognized by peace educators as a form of violence impeding the achievement of a peaceful society. Writing in 1982, D. Sloan notes that a peace that ignores ecological destruction is unsustainable. B. Reardon and E. Nordland (1994) recommend that ecological violence be a part of the context and motivating force for peace education together with the violence of armed conflict and the structural violence of oppression and poverty. Similarly, S. Toh and V. Floresca-Cawagas (1987), A. Bjerdstedt (1990), L. Castro (2001) include violence towards the Earth in their analyses of the types of violence facing humans both on a planetary and interpersonal level.

Definitions of peace proposed in the writings of peace educators further included the notion of peace with Nature, for example, ecological balance as one of five values which should underpin any definition of peace (Hicks, 1988); the absence of the effect of damage on Nature by pollution and radiation as one of four dimensions of peace (Brock-Utne, 1989); ecological well-being as the foundation of a positive, or just and sustainable peace (Mische, 1991); and peace with our planetary ecosystem as superordinate to international peace in a schematic of cross-cultural definitions of peace (Hutchinson, 1992; Castro, 2001). Based on this expanded definition of peace, environmental themes and topics were included in conceptualizations of comprehensive or holistic peace education (cf. Toh & Floresca-Cawagas, 1987; Vriens, 1990; Bjerdstedt, 1990; Hutchinson, 1996; Reardon, 1999) although Reardon (1999) sets the following criteria that would determine when educating about the environment can be considered peace education, that is, when (1) environmental degradation is referred to as ecological violence, violence being a fundamental concern of traditional peace educators; (2) the fact that preserving the environment is a basic prerequisite to the achievement of peace is emphasized; and (3) the links between poverty and environmental degradation and between war and defense preparation and environmental well-being are recognized.

Link between Social and Ecological Peace/Violence

Implicit in a definition of peace that includes an environmental dimension is the link between social and ecological peace. This link is also referred to in the literature. "Peace with the planet is seen as inextricably interwoven with peace among and within nations" (Reardon, 1994a, p. 28). Similarly, both D. Hicks (2000) and G. Pike (2000, p. 221) see the welfare of people and planet as inextricably connected—interlocked. More specifically, according to S. H. Toh (1988, p. 132), the conditions for more environmentally sound development will improve when structural violence decreases and more justice prevails.

The relationship between social and ecological violence has also been pointed out. References have been made to the link between war and environ-

mental degradation (Toh and Floresca-Cawagas, 1987; Vriens cited in Burns & Aspelagh, 1996; Zuber, 1994; Educators for Social Responsibility, 1998); global inequalities and ecological violence (Toh and Floresca-Cawagas, 1987); poverty and lack of ecological responsibility (Zuber, 1994); resource exploitation in the United States and poverty in the developing world (Reardon, 1994). In other words, it is acknowledged that social violence can lead to environmental degradation while exploitation of the environment results in social violence, or as Toh and Floresca-Cawagas (2000, p. 377) remind us, if we do not learn to live in peace with the Earth, it is not likely that humanity will survive.

The need for students to be made aware of and understand this inter-relatedness of social and environmental realities has also been recognized. When asked whether the risks of nuclear war and of far-reaching environmental damage through pollution and overuse of resources should be discussed together in school, 14 of 17 experts in peace education saw this twofold risk as interrelated and agreed that they needed to be treated together (See Bjerstedt, 1992a; 1992b; 1993a; 1993b; 1994a; 1994b; 1994c; Udayakumar, 1993). The need to consider the links between social and environmental peace in education is a basic purpose of the anthology, *Weaving connections: Educating for peace, social and environmental justice* (Goldstein & Selby, 2000). Representing educational philosophies that are collectively directed toward equity, justice, peacefulness, and Earth awareness, the contributors to the volume write about the need for young people to understand the roots of social and ecological violence and to learn to respect and reverence social differences and all life forms. And while the editors acknowledge that only a few of the individual chapters actually “weave the connections” explicitly, they encourage the readers to do so (Goldstein & Selby, 2000).

Conceptual Models

On a curricular level, *environment* is included in conceptual schemata intended to contribute to a clearer understanding of peace education and its implementation. Toh (1988) includes *environmentalism* as one of the concepts that constitutes his five point paradigm, that is, Participation, Equity, Appropriateness, Conscientization, Environmentalism, for assessing development projects and development education materials. Earth-consciousness and ecologically sustainable futures is one of the themes that constitutes the PEACE paradigm that F. Hutchinson (1992) has derived from the Gandhian tradition as a guide for developing peaceful pedagogies and the processes and conditions for making peace with people and planet. J. Synott (1994) lists eco-ethics as one of three global paradigms which determine how we understand and implement peace education, depending on the needs of the local context. Finally, R. Burns and R. Aspelagh (1996) include

environment in their images of preferred worlds that underly those approaches to peace education which strive either for a nonviolent or unsustainable world.

Ecological Topics as Learning Objectives in Peace Education Curricula

Consistent with the theoretical writings, ecological topics have been advocated as learning objectives or goals in a holistic/comprehensive approach to peace education, for example, environmental literacy (Toh, 1988); issues related to ecology (Hicks, 1988); ecological balance, global environment, and world resources (Reardon, 1988a); respect for the integrity of the Earth (Global Campaign in Peace Education cited in Reardon, 2000), environmental destruction and environmental care (First Mindanao Congress for Peace Educators, 2000); ecological security and environmental sensitivity (Harris, 2002). The need to cultivate in students a sense of responsibility for both the local and global environment, sometimes referred to as planetary stewardship, is also cited as a goal for a curriculum in peace education, for example, Hicks, 1988; Reardon, 1988; 1988a; Wahlstrom, 1991; Nordland, 1994; Muller (cited in Reardon, 1988). Such responsibilities would include participating effectively in environmental politics (Hicks, 1988); working to build harmonious relationships between society and the environment (Toh & Floresca Cawagas, 1987; Reardon, 1994); and to resolve environmental problems (Wahlstrom, 1991); promoting sustainable development (Toh & Floresca-Cawagas, 2000; Werner & Case cited in Pike, 2000; Castro, 2001).

Fulfilling these responsibilities for planetary stewardship, students would need to learn to make rational judgments about environmental issues (Hicks, 1988) and to understand our planet and its place in the Universe (Mueller cited in Reardon, 1988), our planetary life systems, and our relationship to them (Reardon, 1988a). Additionally it is recommended that they learn an ethic of interdependence, seeing themselves not as masters of Nature but as part of Nature, that is, of the web of life (Hicks, 1988; Nordland, 1994; Reardon, 1999). Educational activities, therefore, should help them develop respect and concern for Nature (Maxwell, 2002; Castro, 2001; Toh & Floresca-Cawagas, 1987; Hicks, 1988) and a sense of place, that is, an appreciation of their bio region—the life forms in their environment (Reardon, 1994). Finally, ecological lifestyle training is advocated to highlight the link between social and ecological violence, that is, that what we consume and waste, how we spend our leisure time and set personal priorities “have profound significance both for human rights work and ecological healing” (Zuber, 1994, p. 202).

In a few cases, education for both social and ecological peace has been advocated as a two-dimensional goal in peace education curricula. Planetary stewardship, global citizenship, and humane relationships were shown to be superordinate value

concepts central throughout the materials and to the curriculum content, design, and choice of which issues were to be studied, according to a mid-1980s survey of K-12 teacher-designed curricula for peace education in the United States (Reardon, 1988a). Entitled *Growth for peace and environmental responsibility*, R. Wahlstrom's report (1991) of a survey of peace education programs conducted in Finland between 1986 and 1991 maintains a twofold focus on both peace and environment in its discussion of the programs' objectives, that is, to promote the will to save the environment while at the same time helping to develop a sense of social responsibility and solidarity with less privileged members of society, and its basic purposes, that is, to shape human behavior towards nonviolence among humans and between humans and nature.

Participants in the Project on Ecological and Cooperative education, undertaken by a group of peace and environmental educators from Russia, the Ukraine, the United States, Canada, and Norway, sought not only how to understand the nature and consequences of the abuses of war, injustice, and environmental degradation and how they can be avoided, but also to consider positive alternatives, the advantages and social manifestations of peace, justice and ecological balance—how they are related and how they can be achieved and maintained (Reardon & Nordlund, 1994, p. 24). Educators who participated in this project agreed that ecology and cooperation must be at the center of all education (cf Nordlund, 1994; Zuber, 1994, Reardon, 1994, Mitina, 1994). They borrowed from ecological education and adapted for their purposes what B. Reardon (1999) refers to as ecological thinking, that is, an understanding of humans as part of the web of life and human social systems as one among several of those that constitute the larger planetary system. Such an approach they felt would more easily lead to the change in consciousness necessary to envisioning the change in the global social system that is the goal of transformative peace education.⁷

ENVIRONMENTAL EDUCATION

Nature study, *outdoor education*, and *conservation education* are generally acknowledged to be among the predecessors of contemporary environmental education (e.g. Wilke, 1993; Palmer, 1998).⁸ All three appeared in school curricula during the nineteenth century and continue to exist today in multiple forms (Wilke, 1993). Nature study has emphasized the need to understand and appreciate Nature, while outdoor education has focused on the venue of such learning. The aims of conservation education, on the other hand, have been to help people understand the importance of conserving natural resources and related conservation issues, such as good agricultural practices. As a result of the 1968 UNESCO

Biosphere Conference, the aims of environmental education were expanded to include the promoting of a global awareness of environmental problems, and with the adoption of what J. Palmer (1998) refers to as the “classic definition of environmental education,” social factors were recognized as essential to an understanding of environmental problems. This view is reflected in the aims of environmental education, which acknowledge the interdependence between social, political, economic, and ecological factors, and in theoretical and curricular writings, which list socially oriented topics and learning goals, similar to those typically included in peace education, as a part of environmental education.

Interdependence

The notion of the link between human activities and the quality of the environment, that is, “the inter-relatedness among man, his culture and his biophysical surroundings. . . .” (IUCN, cited in Palmer, 1998, p. 7), referred to as interdependence in the environmental literature, was included as one of the major objectives of environmental education by W. B. Stapp (1969) and introduced in the definition of environmental education formulated and adopted at the 1970 International Meeting on Environmental Education in the School Curriculum in Nevada. This was reiterated in the objectives for Environmental Education set by the UNESCO/UNEP conference in Belgrade (1975) and the UNESCO conference in Tbilisi (1977), that is, that environmental education should “foster clear awareness of and concern about economic, social, political and ecological interdependence in urban and rural areas” (Palmer, 1998, p. 7, 11). Explaining how education should take into account the conclusions of the 1992 United Nations Conference on Environment and Development (UNCED), D. Sitarz (1998) adds to this aim, stating that students and adults should acquire an *understanding* (author’s italics) of the interdependence of economic, social, political, and ecological conditions—*locally, regionally, and internationally* (author’s italics). Examining environmental issues from the perspective of the natural and human elements and systems involved, which had become a common, if not ubiquitous, practice in American K-12 science classes by the 1990s, is one approach to achieving this aim (Federico, Cloud, Byrne, & Wheeler, 2002).

Theoretical and curricular writings have elaborated on the nature of this interdependence between humans and the environment. Some have emphasized the interconnectedness of humans and all Earth systems (Byrne, 2000; Federico et al., 2001), acknowledging that “human well being and the health of the planet are inseparable (Agenda 21, cited in Federico et al., 2001, p. 610), or that we cannot have environmental quality without human equality (Fien & Tilbury, 2001). Others have referred in general terms to the impact of human activities on environmental

quality (e.g. Huckle, 1991 cited in Palmer, 1998; Wilke, 1993) or the reverse, that is, the relationship between environmental quality and the continued satisfaction of human needs (Tbilisi Plus Ten Conference cited in Palmer, 1998). Others, yet, have been more specific, referring to the link between environmental degradation, militarism, and war making (Orr, 1992; O'Sullivan, 1999); human actions and soil erosion, species extinction (Orr, 1992); sustainability and peace, equity, cultural diversity and the structure of political institutions (Orr, 1992; Hopkins and McKeown, 2001); sustainability and poverty and inequality (Grundy & Simpkin, 1996); environmental issues and issues of development, peace and conflict, and human rights (Wals, 1999). Others, yet, have referred to a reciprocal relationship between the social and ecological, that is, that human actions that degrade the Earth will result ultimately in a decrease in quality of life in both the social and ecological sphere. This notion is reflected in curricular writings which:

- propose contextual sustainability, a concept that recognizes the reciprocal relationship between human-earth mediations, as an organizing principle for curriculum in secondary schools (Verhaegen, 1999; 2001);
- include the development of an understanding that human lives and livelihoods are totally dependent on processes and resources that exist in the environment and of an awareness of the impact of human activities on the environment as educational aims in environmental education (National Curriculum Council of the United Kingdom cited in Palmer, 1998);
- offer the development of an ecologically sound way of thinking, feeling and acting toward the Earth as a condition for living harmoniously with each other and our environment as a theme for environmental education at elementary levels (Stapp & Cox cited in Braus & Wood, 1993).

Socially Oriented Topics as Learning Objectives in Environmental Education Curricula

While the notion of sustainable development had already appeared in 1980 as a part of the World Conservation Strategy and in *Our Common Future*, a report written for the World Commission on Environment and Development (1987), which linked ecological sustainability with economic development, it was the 1992 United Nations Conference on Environment and Development (UNCED) which placed education for sustainability as central to environmental education.⁹ Conference documents, that is, Chapter 36 of Agenda 21, proposed that environmental

education be positioned in the context of sustainable development (Orellana & Fauteux, 2000); that environment and development be integrated as a cross-cutting issue into education at all levels (Palmer, 1998); and in a multidisciplinary manner (Federico et al., 2001). The *Treaty on Environmental Education for Sustainable Societies and Global Responsibility* (NGO Working Group for the Treaty on Education, 1992) was also developed at the UNCED. However, unlike Agenda 21, which considered the role of education as supportive of efforts of political and business leaders to manage development better, it viewed education as an agent of change and pointed to the fundamental causes of environmental degradation, that is, the dominant socioeconomic system and the deep social injustices which characterize the contemporary situation, and to the links between population, peace, health, human rights, democracy, and the environment.

Thus, after the UNCED, education for sustainability was included as a part of environmental education and while views as to its ultimate goals or purposes varied, there appeared in the environmental literature concern about the social causes and consequences of environmental degradation as well as questions about how to resolve the problems it posed (Federico et al., 2001).¹⁰ Thus, social issues, which typically have been the concern of comprehensive peace education, became key to education for sustainability. S. Ahearn (1994), for example, includes justice, dignity, and nonviolence as the basis for building security in an ecological society. The *Montreal Declaration* (Quebec Association for the Promotion of Environmental Education, 1997) calls for a commitment to position environmental education more comprehensively and globally, that is, linking environment and development and including the dimensions of education for peace, justice, and democracy (Orellana & Fauteux, 2000). E. Flogaitis (2000) suggests that the principle of social and ecological solidarity, of social justice and democracy be used to design future societies while according to J. Fien and D. Tilbury (2001), education for sustainability actually seeks to develop closer links among environmental quality, human equality, human rights and peace, and their underlying political threads.

Central to peace education curricula on structural violence, *social justice* is a value concept that is also often included in the curricular literature in environmental education. A precursor to views that would appear after the UNCED (1992), the sample scope and sequence for environmental education presented in J. Braus and D. Wood (1994) notes that a human ethic based on social justice for all is a necessary part of an environmental ethic. J. Huckle (cited in Palmer, 1998) refers to helping students develop an awareness of how the costs and benefits of using Nature are not shared equally in most societies as one of nine components of education for the environment. Curricular writings in environmental education appearing after the UNCED have proposed an integration of social justice and ecological sustainability as the basis of a transformed world view for all, including

educators (Sterling, 1996); justice as one of the goals towards which education for sustainability strives (Fagan, 1996); social justice as one component of political education in youth work training (Grundy & Simpkin, 1996), and as one of the three value goals of the Earth Community School Model of Secondary Education (Verhagen, 1999). Students are also expected to develop a concern for injustice (Federico et al., 2001). Related topics, that is, *environmental racism* (Kaza, 1999; O'Sullivan, 1999), *equity* (Sitarz, 1998; Paden, 2000; Federico et al., 2001), *human rights* (Wals, 1999; Federico et al., 2001; Hopkins & McKeown, 2001) are also advocated as a part of the social dimension of environmental education.

Though referred to less frequently, *peace*, *conflict*, and *cultural diversity* are three other topics included in curricular writings for environmental education which recognize the social dimension of ecological sustainability. Peace is considered an issue that must be confronted in dealing with ecological sustainability (Orr, 1992; Wals, 1999) and in building an ecologically secure society (Ahearn, 1994). Moreover, an analysis of the causes of social violence, including environmental racism, on a regional, local and personal level is viewed as essential to planetary education that aims for personal and social transformation (O'Sullivan, 1999). Curricular objectives further include the need to transmit knowledge about conflicts that can arise about environmental issues (Palmer, 1998; Wals, 1999); to consider alternative ways to resolve these conflicts (Palmer, 1998); and to learn to resolve environmentally related conflicts peacefully (Sitarz, 1998). Cultural diversity is also an issue that must be considered in dealing with ecological sustainability (Orr, 1992). Respect for diverse points of view and values is part of the emerging understanding of environmental education for sustainability (Byrne, 2000; Federico et al., 2001; Hopkins & McKeown, 2001); it is included in standards for environmental education proposed by the North American Association for Environmental Education, the World Resources Institute, and members of President Clinton's Council on Sustainable Development (Sitarz, 1998), and by the National Association for Environmental Education in the United Kingdom (Palmer, 1998).

The Convergence of Peace Education and Environmental Education

The need for environmental education and specializations in education which focus on the causes and manifestations of social violence, for example, development, peace, human rights education, to come together and perhaps even to integrate is yet another theme that appears in the environmental literature. *Caring for the Earth*, a revised version of the World Conservation Strategy states that to appropriately prepare children and adults to live sustainably, environmental education should be *linked* (author's italics) to social education at all levels, the former helping

people understand the natural world and the latter imparting an understanding of human behavior and an appreciation of cultural diversity (IUCN/UNEP/WWF, 1991, p.53). S. Sterling (cited in Palmer, 1998) also affirms the need to *integrate* (author's italics) the concepts of sustainability in environmental and development education with other related cross disciplinary educational approaches. D. Sitarz (1998) extends the fields that should work together beyond education to include related areas in the social sciences, noting that if they are brought together, they can “explore the potential synergy that can be unleashed by creative *interdisciplinary* (author's italics) thinking (p. 201). Moreover according to D. Selby (2000), each of these fields, for example, environmental, peace, human rights, development education, needs to recognize that their respective fields of interest are *mutually enfolded* (author's italics)—part of a larger web.

The literature in environmental education also includes frameworks which have been suggested as a means of effecting such integration on a conceptual level:

- *Education for Sustainability*—weaving together into a core framework educations oriented toward social change, for example, development, environment, peace, human rights, multicultural, futures . . . (Sterling, 1996)
- *Viability*—encompassing environmental issues and issues of poverty, population, health, food security, democracy, human rights, and peace with environmental education as the primary means for education for a viable future (Orellana & Fauteux, 2000)
- *Transformative Peace Education*—addressing the problems of conflict and violence, both social and ecological, on a planetary/global regional/local and personal level (O’Sullivan, 1999)
- *Global Environmental Education*—exploring the interface between environmental education and other progressive educations, for example, peace education, humane education, ecofeminist environmental education, education for human rights and social justice and others (Selby, 2000).
- *Education for the Development of Responsible Societies*—including dimensions of present day education which contribute to resolving the main social and ecological challenges of our world (Sauvé, 2000).

Arguments put forth for a “vigorous interdisciplinarity” (Selby, 2000), which would link fields of education that deal with the social and environmental challenges of our day, refer to the present confluence of environmental and social crises (Selby, 2000) and the increasing commonality of the aims and goals and of

the vocabulary and educational approaches of these fields (Argyeman cited in Sterling, 1996). In fact, according to S. Sterling (1996) while a state of integration has not been reached, there has been an interesting and significant convergence among these areas in recent years.

Indeed, as this review of selected literature in peace education and environmental education has shown, such an overlap is evident in the theoretical and curricular developments in each field though it clearly does not yet reflect a majority view or common practice. Some educators in both fields recognize the link between social violence and environmental degradation and the converse, social peace, and ecological sustainability. For peace educators the well-being of people and planet is “interwoven,” “inextricably connected,” “interlocked”; for environmental educators it is interdependent. The definition of peace used by peace educators has been expanded to include peace with the planet while environmental educators who educate for sustainability view social justice as essential to achieving sustainability. Finally, these notions are reflected in the learning objectives and topics of both fields. Environmental concerns have been incorporated into the curricular writings in comprehensive peace education and social factors are now an essential part of environmental education for sustainability. Each field has incorporated values and concepts which traditionally form part of the conceptual core of its counterpart into its curricula. In the case of peace education, *education for positive peace*, *comprehensive peace education*, and *holistic peace education* already serve as frameworks which unify education in the areas of human rights, peace, development, and environment.

Additionally, one can look to development education (Sterling, 1996; Selby, 2000) for evidence of this convergence of environmental and social concerns in education. According to a 1992 UNICEF definition of the goals of development education, it should promote the development of attitudes and values, such as global solidarity, peace, tolerance, social justice, and environmental awareness, and facilitate the acquisition of knowledge and skills which will empower learners to promote these values and bring about change in their own lives and in their communities, both locally and globally (cited in Fountain, 1995).

Global education is a field which has also presented a synthesis, primarily, of peace, development, human rights, and environmental education (Greig, Pike, & Selby, 1987), focusing especially on the interdependence and interrelatedness of local, national, and global issues. The aims of this approach, which is said to take into account the needs of both person and planet, are set out by S. Greig, G. Pike, and D. Selby (1987), as follows:

- Students should understand the principles of ecology, that is, the dynamic nature of ecological systems and how their stability can be threatened by the actions of humankind.

- Students should appreciate what other cultures have to offer—that is, an awareness and appreciation of diverse, cultural viewpoints and experiences . . .
- Students should have a concern for justice, rights, and responsibilities.¹¹

PURPOSE AND CONTENT OF THE ANTHOLOGY

This anthology intends to consider how peace education and environmental education can appropriately respond to the social and environmental crises that threaten the survival of all life and cultures that make up the Earth community. It focuses specifically on the interconnectedness that exists between these two sets of problems. The review of selected literature has brought to our attention the voices of those who explicitly advocate a convergence of these fields; it has also revealed the outlines of an emerging overlap between the theoretical and curricular development of the two fields. However, as noted above, though it bears repeating, this overlap should not be understood to reflect a majority view on the part of members of either field regarding the need to integrate education for social and ecological peace, nor does it shape common practice. Therefore, while committed to the diversity of educational responses and not advocating an integration of the two fields into one, the anthology seeks to further explore the manner of such a convergence. That is, how can each of these specializations in education incorporate into their curricula and learning activities the goals, knowledge and/or skills of the other so as to help learners understand and respond in an integrated manner to the social and ecological problems of our time? Thus, the anthology aims to:

1. further refine the emerging understanding of how to integrate education for social and ecological peace;
2. extend awareness of this understanding beyond the critical core of educators represented in the review;
3. illustrate how understanding can be translated into educational practice.

While each chapter contributes to this threefold aim in a unique manner, conceptually the chapters are linked in theory and/or practice by the recognition of the reciprocity that exists between social and ecological peace and its antithesis, social and ecological violence.

P. Mische (chapter 1) focuses on *ecological security*. The chapter considers the significance of security in human and societal development and how requirements for security have changed over time. It then illustrates the two-way linkage between war and environmental degradation to argue that *ecological security* is at the core of human security. Thus, chapter 1 describes the *social context* which together with the *educational context* outlined above provide the rationale for the anthology. Finally, educators are challenged to facilitate a radical new learning—to re-inhabit the Earth responsibly and overcome habits of war and violence. According to Mische, this new learning will require exchanging existing paradigms and worldviews for an understanding that peace and ecological sustainability are critical to authentic security and authentic community. The chapters that follow take up this challenge.

F. C. Verhagen (chapter 2) presents a framework that educates for *contextual sustainability*, the notion that the integrity of the natural world is essential to the achievement of social peace and that, reciprocally, a society characterized by peaceful relationships among humans provides the context for the achievement of ecological sustainability. The chapter describes the components of the framework: its ideological foundations—cosmogonism, biocentrism, and bioregionalism, and value concepts—ecological sustainability, social justice, active nonviolence, and participatory decision making. It proposes the development of a transdisciplinary standard as a strategy for incorporating the framework into the curriculum in middle schools, acknowledging the need to work for educational change by taking advantage of contemporary trends in education. In making ideological foundations one component of the educational content of the framework, the chapter thus responds to the need, expressed in chapter 1, to educate towards a change in existing worldviews with the value concepts, the second component of the framework, guiding related behavioral changes.

A. Brenes-Castro (chapter 3) describes an *Integral Model of Peace Education* which was developed as part of a broader educational initiative organized by the United Nations University of Peace to support efforts towards post-conflict peace-building in Central America. Peace, universal responsibility, and community are values that are central to the Model. Peace, the core value and overall goal, is understood in terms of harmonious relationships with the self, others, and with Nature. The other two are normative values, shaping these relationships. The chapter outlines the contents of the Model, that is, the sets of specific values and traits that express peace within each of these relational contexts; it describes a series of ten didactic modules that have been designed to apply the Model for educational use in community development with groups involved in emancipatory struggles. The chapter concludes with an account of one such application in a densely populated marginal urban community in Costa Rica. Chapter 3 is also based on an explicit

biocentric worldview but, additionally, on the core assumptions that all humans aspire to live in peace with one another and in a sustainable relationship with the biosphere and that there are universal values that shape a culture of peace but that the expression of these values will be culture specific. Thus, values are also central to Brenes' conceptual framework.

L. Sauvé and I. Orellana (chapter 4) also focus on education in communities characterized by emancipatory struggles. The chapter first outlines the authors' assumptions about the nature and purpose of environmental education and describes convergences between environmental and peace education. However, its central concern is whether socially critical environmental education can be justified in the context of emancipatory struggles—in communities where social conflicts are so serious that they overshadow environmental concerns. Based on their experience with an environmental learning project with such communities in Colombia, Brazil, and Bolivia, they describe and provide examples of the use of the *learning community* as the context and method for enabling groups involved in conflict to learn how to take action to improve and transform both the social and environmental conditions in their community. Thus, they re-conceptualize environmental education in social terms as directed towards the achievement of a culture of peace characterized by harmonious relationships among humans and with Nature and in personal terms as emancipatory—developing critical, creative, and courageous individuals who are able to collaborate in this work. Building upon chapter 2 and 3, which provide frameworks intended to determine the content of an integrated approach to education for social and ecological peace, they propose a methodological innovation which would facilitate it.

A. Wals and Fanny Heymann (chapter 5) also focus on environmental education in nonformal settings, but in this chapter, two themes, introduced in earlier chapters, are central to facilitating community education, that is, (1) that expressions of social peace and/or sustainable living are context specific, and (2) that conflict can play a key role in the process whereby such expressions are developed, accepted, and implemented. Focusing, therefore, on the role of conflict as it is manifest in determining what sustainable living should entail in a particular context, A. Wals and F. Heymann first outline varying contexts for decision making about sustainable living in terms of the extent to which they allow and foster self-determination and openness. They then argue that these varied “spaces” will give rise to conflicts whose outcome can be best facilitated through social learning, understood as a collaborative process of deconstructing and reframing the views or frames held by individuals or groups in conflict with one another. They outline the steps of a methodology for facilitating this process, that is, *dialogical deconstruction*, whose goal is the creation of frames participants will hold in common and which, therefore, lead to a more open discussion about and resolution to issues of concern. Like the

“learning community,” “dialogical deconstruction” is another methodological innovation for education in settings characterized either by the potential for conflict or in an actual state of conflict. However, Wals and Heymann’s point of emphasis is the *process* of social learning, not its content nor a context that will facilitate it, an approach they also recommend for education in formal settings.

A. L. Wenden (chapter 6) advocates the need to include *perspective development*, an acquired set of organized assumptions and values about a social reality, as a learning objective in a curriculum that would integrate education for social and ecological peace. The chapter first provides the rationale for doing so—arguing that perspective development receives scant attention in peace and environmental education and that values, the basic components of a perspective, have a pervasive and profound influence on human thought and action. She then proposes and defines the values that should be the core components of a perspective for analyzing and evaluating social and ecological realities, that is, nonviolence, social justice, ecological sustainability, intergenerational equity, and civic participation. Thus, as is the case with the F. C. Verhagen framework and the Brenes-Castro model, values are assigned a central role in education for social and ecological peace. Moreover, chapter 6, as do earlier chapters (e.g., 4, & 5) also addresses the question of methodology, providing guidelines for perspective development that would promote critical reflectiveness, and the use of analytic and imaging skills—all essential to an autonomous application of a value-based perspective.

I. Harris and P. Mische (chapter 7) also address the need for an integrated approach to learning objectives in peace and environmental education. Identifying the two fields as within the tradition of education for social responsibility, they first outline some of their commonalities and differences. The chapter then describes the content of concepts that integrate ecological balance and a sustainable peace. It explains how environmental learning, specifically an understanding of natural systems, enhances concepts of peace highlighting both its dynamic and communal nature and how peace strategies, that is, prevention, peacemaking, peacekeeping, and peacebuilding, can be applied to environmental crises. In this way chapter 7 provides peace educators with an expanded understanding of what is entailed in the achievement of peace while, at the same time, making environmental educators aware of strategies for preserving environmental integrity. Furthermore, by introducing the notions of environmental peacemaking, peacekeeping, and peacebuilding the chapter responds to the need, advocated in chapter 1, to educate for an enhanced understanding of what ecological security entails.

Almost all of the chapters in the anthology refer to the Earth Charter. In chapter 8 P. B. Corcoran expands our knowledge about and appreciation of the significance of this document, which has been included in a list of inspirational

documents, such as the Magna Carta, which have profoundly influenced the direction of human society. The chapter describes the sources of the values that constitute the Charter and the consultation process whereby they were incorporated into several drafts, and ultimately, the final document. It considers two educational uses of the Earth Charter and provides illustrative examples of how the Charter has been used for educational purposes in diverse settings. Focusing on the educational uses of the Earth Charter, this last chapter provides a restatement of the theme which has determined the aims and purpose of the anthology and which, therefore, underlies the individual chapters, that is, the interdependence, even indivisibility, as the author of this chapter writes, among environmental challenges, human rights, and peacemaking. At the same time, it also provides a framework, a comprehensive framework of values and ethical principles, for guiding an integrated approach to education that would focus on this connectedness between social and ecological realities.

NOTES

1. E-mail communication from a social scientist in Serbia to J. Myers-Walls sent to Peace Education Commission Listserv, April 25, 1999.
2. See L. Brock (1992) for an analysis of some causal and instrumental linkages between war or direct physical violence and the environment.
3. Excerpted from *The summary profile of the case submitted to the International People's Tribunal on Human Rights and the Environment* by Research International on behalf of the People of the Essequibo Riverian Area of Guyana and *The Report of the Guyana Society for the Protection and Preservation of the Environment* (1997).
4. Adapted from V. M. Kotlyakov, (1991), The Aral Sea Basin, *Environment*, 33 (1): 3-14.
5. Excerpted from S. Bliss, (2002), Western States, *Tom Paine. Common Sense*, <http://www.tompaine.com/dispatch>.
6. Excerpted from J. W. H. Mellor, (1988), The intertwining of environmental problems and poverty, *Environment*, 30: 8-30.
7. Writing in a similar vein, M. Gronemeyer (1996) suggests that pedagogical principles that characterize the ecological movement should be applied to peace education.
8. See J. Palmer (1998) for other precursors and/or contributors to environmental education.

9. Sustainability as understood at the UNCED and in earlier documents meant that in providing for their needs, contemporary societies should not endanger the resource pool needed for future generations to meet these same needs (e.g. WCED, 1987).

10. J. Fien and D. Tilbury (2002) list the following as terms used to refer to sustainability education, that is, education for sustainable living, education for sustainability, education for sustainable development, education for a sustainable future, and environmental education for sustainability. Education for sustainability is the term used in this introduction.

11. For an overview of *specific* areas of convergence between peace, development, human rights and environmental education, see S. Greig, G. Pike and D. Selby, (1987), *Earth rights* (London: Kogan Page co-published with World Wildlife Fund); and A. Wals, (1999), Stop the violence, in L. Forcey and I. Harris (eds.) *Peacebuilding for adolescents* [pp.239–262] (New York: Peter Lang).

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