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*Editors*

Expanding Peace  
Ecology: Peace,  
Security, Sustainability,  
Equity and Gender  
Perspectives of IPRA's  
Ecology and Peace  
Commission



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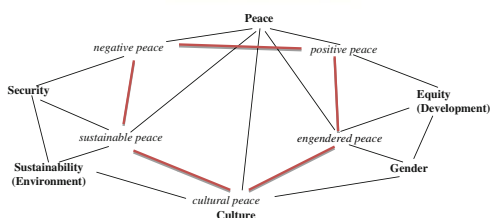
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Úrsula Oswald Spring · Hans Günter Brauch  
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Editors

# Expanding Peace Ecology: Peace, Security, Sustainability, Equity and Gender

Perspectives of IPRA's Ecology and  
Peace Commission



 Springer

 **IPRA**  
International Peace Research Association

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# Chapter 1

## Expanding Peace Ecology: Peace, Security, Sustainability, Equity, and Gender

Úrsula Oswald Spring, Hans Günter Brauch and Keith G. Tidball

**Abstract** This introductory chapter reviews the conceptualization of peace and ecology and the efforts in the scientific literature to link both areas. The authors expand upon the conceptualization of peace since the 1980s and the widening of the ecology concept from the natural to the social sciences, and then discuss linkages between peace and different ecological approaches of deep, human, social, geographic and political geoeology and ecofeminism. They then contextualize from a peace research perspective the expansion of the ecology concept to a ‘political geoeology’ and a ‘civic ecology’, linking security, equity, sustainability, gender and peace. They conclude with an overview of the subsequent eight chapters in this volume.

**Keywords** Ecology · Environmental peacemaking · Environmental studies · Environmental security · Gender · Peace · Peace ecology · Peace research · Sustainability · Sustainable peace

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## 1.1 Introduction

‘Peace ecology’ is an emerging scientific concept that was influenced by the scientific discourse on environmental security and environmental peace making. With this introduction, the three co-chairs of the *Ecology and Peace Commission* (EPC) of the *International Peace Research Association* (IPRA) introduce this concept as a framework for the study of environmental and ecological problems from a peace research perspective. This introduction is divided into four thematic sections and a summary of the chapters of this book that emerged from presentations at the 24th IPRA conference in Tsu City in Japan in November 2012. All chapters were anonymously peer reviewed and subsequently thoroughly revised.

The first section reviews the conceptualization of peace and ecology and the efforts in the scientific literature to link both areas from the perspective of two parallel research programmes of ‘peace research’ or ‘peace studies’ and ‘environmental research’ or ‘ecology’ (Sect. 1.2). The second section introduces the expanding conceptualization of peace since the 1980s and the widening of the ecology concept from the natural to the social sciences (Sect. 1.3). The third section discusses linkages between peace and different ecological approaches of deep, human, social, geographic and political geocology and ecofeminism (Sect. 1.4). The fourth section contextualizes from a peace research perspective the expansion of the ecology concept to a ‘political geocology’ linking security, equity, sustainability and peace (Sect. 1.5). The final section offers an overview of the subsequent nine chapters in this volume (Sect. 1.6).

## 1.2 Conceptualization of Peace and Ecology

As any basic concept in the social sciences the concepts of peace, the environment and ecology are “highly contested” (Gallie 1955–1956) and rely on different normative, political, cultural and religious assumptions, values and contexts. Therefore a brief conceptualization and conceptual contextualization of both components of ‘peace ecology’ is needed.

### 1.2.1 Peace

Peace and war constitute an opposite status in human history and experienced substantial changes in different cultural and geographical contexts.<sup>1</sup> Peace has different meanings, but globally it is understood as a state of tranquillity, quietness,

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<sup>1</sup> This section builds on previous publications by Brauch (2008a) and Oswald Spring (2008, 2008a).

and freedom from any disturbance, oppressive thoughts or emotions. Peace stands also for harmony in interpersonal relations based on mutual agreements among the people involved. The term ‘peace’ (in French ‘paix’; Italian: pace; Spanish: ‘paz’; German ‘Frieden’) originates from the Latin ‘pax’ and is associated in English with: (1) no war; (2) an agreement that ends a war; (3) a peaceful situation with no unpleasant noise; (4) a feeling of calmness and lack of worry and problems; (5) a situation in which there is no quarrelling between people who live or work together (Langenscheidt-Longman 1995: 1041). Many dictionaries combine a state of no war with a positive state of harmony. In Russian ‘mir’ refers to both ‘peace’ and the ‘world’. In pre-Hispanic cultures ‘peace’ implies an equilibrium between nature and humans, gods and humans, as well as among human beings. Peace may also be linked to the oriental concepts of harmony or equilibrium. In traditional societies such equilibrium has been very important (Oswald 2008a: 10).

The *Brockhaus Encyclopaedia* (19th ed., 1988, vol. 7: 660–663) defined peace as a “condition of a treaty-based and secured living together both within social unity and among groups, societies or organizations”, as the opposite to war that will not last without a minimum order and consensus. After the Cold War, the *Brockhaus Encyclopaedia* (21st ed., 2006, vol. 9: 774–779) defined peace as a concept pointing to “harmonious relations ... among peoples, groups, organizations, interest groups and states”. Peace was considered as a stable process pattern of an international system that guarantees that inter-state conflicts are being resolved without the use of organized force that requires democratization.

The peace concept has emerged from different roots, in Europe from the Greek ‘eirene’ (*Ειρήνη*), Roman ‘pax’, pax romana or peace within the borders (limes) of the Roman Empire, and the Christian tradition (‘pax Christiana’) in the Middle East from the Hebrew ‘shalom’ and Arabic ‘سَلَامٌ *salām*’, and in South Asia from ‘ahimsa’ (peace with nature). The Jaina *ahimsa* “no harm” adds the ecological dimension that was missing in the occident. In other cultures, different values, goals, and other concepts (law, security, justice, harmony with nature) are also associated with ‘peace’. The Hinduist and Buddhist philosophy of the unity and connection among all living species widened the understanding of nonviolence, and for the Jaina religion nonviolence is the major religious duty to avoid a harmful karma. Mahatma Gandhi based his struggle for independence on ‘ahimsa’ (Dadhich 2008) and Martin Luther King promoted nonviolence against racial discrimination of Afro-Americans.

In Greek philosophy, Plato argued that war and conflicts should be avoided within the polis. Aristotle combined peace with politics and emphasized that all political goals may only be realized under conditions of peace, and war is only acceptable as a means for the defence of the polis. During the Roman period, ‘pax’ was closely tied to law and contracts, and with the emergence of the Roman Empire, the imperial *Pax Romana* relied on contractual subjugation under the emperor in exchange for protection against external intruders.

Augustine developed a comprehensive Christian concept of peace that distinguished between peace on earth (*pax humana*) and peace of God (*pax divina*). Thomas Aquinas stressed the close connection of peace with justice (*iustitia*), but

also with the love for other human beings (*caritas*). For him peace is a political good, reflecting goals of the state, and a precondition for a good life. During the 14th and 15th centuries, several convents called for a peace among contentious Christian factions (*pax Christiana*), and the Westphalian Peace of 1648 requested that all parties adhere to the ‘*pax Christina universalis perpetua*’. After the Peace of Utrecht (1713), Abbé de Saint-Pierre called for a federation of princes to secure a ‘*paix perpétuelle*’ in the tradition of peace proposals from Thomas More’s *Utopia* (1516) to William Penn’s *Essay towards the present and future peace in Europe* (1693), and by utilitarian (Bentham) and socialist authors (Fourier, Saint-Simon).

Besides the ‘peace within the state’ that was achieved through its monopoly of the means of force and its use, the ‘peace between and among states’ has become a major concern of modern international law since the 16th (de Vitoria, Suárez) and 17th century (Grotius, Pufendorf). Its authors still considered war as a legitimate means for the realization of interests among states (*ius ad bellum*), while calling for constraints during war, such as a continuation of diplomacy and the activities of neutral organizations (*ius in bello*). In his treatise for an *eternal peace* (1795) Kant went a step further and proposed a ban on war itself and developed a legal framework for a permanent peace based on six preliminary and three definite articles that called for a democratic system of rule, an international organization (League of Nations), and the respect for human rights. In the 19th and early 20th centuries many writers glorified war (*bellicists*) while *pacifists* and the peace movement of the late 19th century advocated a condemnation of war. After the Mexican independence (1810) Benito Juárez introduced the principle: “the respect of the rights of others is peace” in treaties with other countries. In modern theories of hegemonic stability *Pax Americana* refers to a peace as proposed by the USA.

After World War I, the Kantian tradition was instrumental for the creation of the League of Nations, while after World War II, Hobbesian lessons were drawn from its collapse. The United Nations (UN) gained ‘teeth’ with the advent of the Security Council, and during the Cold War a bipolar power system based on military alliances and the terror of destructive arms prevailed. With the end of the Cold War, war as a social institution returned as resource, ethnic, and religious conflicts, primarily within states but also as pre-emptive wars not legitimized by the UN Security Council and against the expressed preferences of many state members. Since the 1980s there has been an intensive debate in international relations on the ‘liberal peace’ (Paris 2004; Campbell et al. 2011) or ‘democratic peace’ (Russett 1993; Oren 1995; Hermann and Kegley 1995; Layne 1994; Rosato 2003; Spiro 1994). During the 1990s proposals for a new international order in the Kantian and Grotian traditions were gradually replaced by power-driven concepts of preventive wars and the ‘war against terror’.

Peace has been defined as a basic value (Zsifkovits 1973) and as a goal of political action, as a situation of non-war, or as a utopian and more just world. Schwerdtfeger (2001: 28–29) distinguished four alternatives to define peace: (1) a nominal definition; (2) as a result of a contemplative hermeneutic process; (3) a review of the historic evolution of the concept; (4) a determination by an analysis of

opposite concepts. Galtung (1967, 1968, 1969, 1988, 2013) distinguished between a condition of ‘negative’ (absence of physical or personal violence—or a state of non-war) and ‘positive peace’ (absence of structural violence, repression, and injustice), taking the form of “economic exploitation and/or political repression in intra-country and inter-country class relations”. In his mini-theory of peace. (Galtung 2007; Galtung and Fisher 2013) argued that “Peace is not a property of one party alone, but a property of the relation between parties”. He distinguished among negative (disharmonious), indifferent and positive (harmonious) relations that often result in *negative* (absence of violence, cease-fire, indifferent relations) or *positive peace* (harmony; 1993: 688–689). Senghaas (1997, 2013) pointed to five conditions of peace among nations. (1) positive interdependence; (2) symmetry of interdependence; (3) homology; (4) entropy; that require (5) common softly regulating institutions. In his ‘civilisatory hexagon’ Senghaas (1994, 1995, 2013) referred to six related aspects: (1) an efficient monopoly over the use of force; (2) effective control by an independent legal system; (3) interdependence of social groups; (4) democratic participation; (5) social justice, and (6) a political culture of constructive and peaceful conflict transformation. Among the many attempts to define peace, no consensus on a generally accepted minimal definition emerged. According to Czempiel (1986) peace has an institutionalized patterned process of no-war. For Brock (2002: 104f.) peace should be more than the absence of war in the framework of time (eternal peace), space (peace on earth), society (domestic intra-societal peace), procedure (peace as peaceful dispute on peace), and a heuristic dimension to move from the causes of war to the conditions of peace.

Alger (1999: 13–42; 2014) provided a map of 24 peace tools that can be derived from efforts of peacebuilding during the 19th century (2 tools) and the 20th century (22 tools) which he associated both with the negative (11) and the positive (13) peace concept. Alger (1999: 40–42) filed the 24 peace tools into nine categories: “(1) words, (2) limited military power, (3) deterrent military power, (4) reducing weapons, (5) alternatives to weapons, (6) protecting rights of individuals and groups, (7) collaboration in solving common economic and social problems, (8) equitable sharing of economic, communications and ecological systems, and (9) involvement of the population at large through peace education and organized participation.”

In the UN Charter of 1945, the ‘concept of peace’ has been mentioned among the purposes of the UN in Art. 1,1: “to maintain international peace and security”, and “to take effective collective measures for the prevention and the removal of the threats to the peace, and for the suppression of acts of aggression or other breaches of the peace”, as well as peaceful conflict settlements. Wolfrum (1994: 50) pointed to both narrow and wide interpretations of peace in the Charter. In Art. 1(2) and 1(3) the UN Charter uses a wider and positive peace concept when it calls for developing “friendly relations among nations” and for achieving “international cooperation in solving international problems of an economic, social, cultural, or humanitarian character”. A wider concept of peace was the basis for the “Proclamation of the International Year of Peace” in GA Res. 40/3 of 3 October 1985 that stated that the promotion of international peace and security required continuing and positive action by peoples and states (Wolfrum 1994: 51).

In chapter VI on the Pacific Settlement of Disputes, Art. 33 uses a ‘negative’ concept of peace that is “ensured through prohibitions of intervention and the use of force” (Tomuschat 1994: 508). In Chapter VII of the UN Charter dealing with “Action with Respect to Threats to the Peace, Breaches of the Peace, and Acts of Aggression”, in Art. 39, a ‘negative’ concept of peace prevails, referring to “the absence of the organized use of force between states”. In a Security Council meeting on 31 January 1992 the Heads of States and Government “recognized that the absence of war and military conflicts amongst states does not in itself ensure international peace and security” (Frowein 1994: 608). In the framework of Chapter IX on “International Economic and Social Cooperation”, Art. 55 (3) refers to the “universal respect for, and observance of, human rights and fundamental freedoms”. It has been suggested, to include “the right of self-determination, to peace, development, and to a sound environment” (Partsch 1994: 779) as “human rights of the third generation” (Vasak 1984: 837).

In the UN Charter of June 1945, a narrow or a ‘negative’ concept of peace has been in the centre with a few direct references to ‘positive’ aspects to be achieved by ‘friendly relations among nations’, and by ‘international cooperation’. No reference is included in the Charter that refers to ‘peace with nature’, nor can extreme outcomes emerging from global environmental change be conceptualized as ‘threats to the peace’. The ‘positive peace’ concept refers to peaceful social and cultural beliefs and norms, the presence of economic, social and political justice and a democratic use of power including nonviolent mechanisms of conflict resolution. ‘Sustainable peace’ or ‘peace with nature’ was added later in the debate within the UN and therefore first we turn now to the ecology concept.

### ***1.2.2 Ecology***

Ecology is based on the two Greek terms ‘oikos’ (οἶκος) equivalent of a household, house or family and ‘logos’ (λόγος) speech, philosophy or science. It is the root of both economics and ecology. The *Shorter Oxford English Dictionary* (5<sup>th</sup> 2002: 789) defines ecology as: “1. The branch of biology that deals with organisms’ relations to one another and to the physical environment in which they live; (the study of) such relations as they pertain to a particular habitat or a particular species; also human ecology; 2. The political movement that seeks to protect the environment, esp. from pollution.”

The *ecology* concept was coined by Ernst Haeckel (1834–1919) for the study of living species and their physical and biotic surroundings. The ecology concept was developed by many scientists from different disciplines and world regions, based in part upon observations of indigenous cultures in the Americas, in China, India and the Middle East where knowledge on the use and dangers of plants and animals were crucial for human survival and cultural development. It was deeply influenced by Darwinian theory that focused on competition as a selective force. During the late 19th century the concept was used for the ecology of animals,

plants and in hydrobiology, while a modern definition includes (a) the interactions between organisms (individuals, populations, biocoenosis), (b) in their abiotic and biotic environment and (c) the links in the energy, material and information flow. According to Ellen (1996: 207), the ecology concept “has been centrally concerned with the concept of adaptation and with all properties having a direct and measurable effect on demography, development, behaviour and spatio-temporal position of an organism”. *Biological ecology* has been concerned “with population dynamics, energy transfer, systems modelling, nutrient cycles, environmental degradation and conservation; and since the 1970s, especially with the application of neo-Darwinian thinking of socio-ecology”. *Human ecology* is used in human geography, urban sociology and anthropology. Ellen argued that “the other major impact of ecological concepts in the social sciences has been in the relation of political environmentalism, and to environment and development... Increasing attention is also being paid to the cultural construction of nature, indigenous technological knowledge, the management of collectively owned resources, and environment history” (Ellen 1996: 208).

Vladimir Vernadsky (1926) defined the biogeochemical cycles as the sum of all ecosystems. Arthur Tansley (1935) established an interactive system between the living created (biocoenosis) and their environment (biotope) and ecology which he transformed into a science of ecosystems that was crucial for the development of ecology as a modern systems science. Odum (1953, 1975, 1977, 1998) defined ecology as the study of the linkages of organisms and of groups of organisms with their environment and on their structure and functions (Nentwich et al. 2004: 1). Eduard Suess (1875) proposed the term biosphere, including the conditions that are promoting life on Earth, such as flora, fauna, minerals and different cycles. The nitrogen cycle, the atmosphere, hydrosphere and lithosphere were developed.

The ecology concept was used primarily in biology as ‘autoecology’ (referring to eco-physiology or biochemical ecology) and ‘synecology’, as ‘populations (demographic) ecology’ and as ‘community ecology’ and as ‘systems ecology’, and in physical geography as ‘landscape ecology’ (Troll 1968) and ‘geoecology’ (Huggett 1995). Therefore historically the ecology concept was basically related to the biophysical sciences and only after World War II did the concept become more integrated in the social sciences and the humanities.

### **1.3 Expanding Conceptualization of Peace Since the 1980s and Widening of the Ecology Concept**

The scientific peace concept has expanded beyond Galtung’s differentiation of ‘negative’ and ‘positive peace’, especially since the release of the Brundtland report (1987), to ‘sustainable peace’ (OECD 2011). The ecology concept has been taken up, e.g. in economics as ‘ecological’ economics and the concept has proliferated as ‘deep’, ‘human’, ‘social’, ‘political’, ‘peace’ and ‘political geoecology.’

### 1.3.1 Expanding Peace Towards Environment Issues

Mahatma Gandhi's thinking, inspired by the Hinduist and Buddhist traditions and the Jaina 'ahimsa' concept on nonviolence and the environment had a significant impact on Arne Naess' environmental philosophy and 'deep ecology', and on Schumacher's (1999) 'small is beautiful' philosophy (Weber 1999: 349–361). However, neither within peace research nor environmental studies have the manifold linkages between peace and ecology been systematically explored.

Within peace research few scholars addressed environmental problems and challenges, among them Kenneth Boulding (1966, 1978) and Elise Boulding (1988, 1989, 1992, 2000). In *The Economics of the Coming Spaceship Earth* (1966, 1970),<sup>2</sup> Kenneth Boulding used the symbol of cowboys arguing that the world of unlimited resources is coming to an end and in *Ecodynamics* (1979)<sup>3</sup> he combined evolutionary biology, ecology, peace research and Keynesian, socio and environmental economics (Khalil 1996). Later, Boulding (1983) critically reviewed the arguments for and against ecosystems and his concept of the 'empty niche' in biology, societal evolution and artefacts, biological catastrophes, ecological and human interactions, social ecosystems and finally, evolutionary economics. Elise Boulding, sociologist, feminist and a mother of peace education, linked peace to ecology from a practical daily experience, insisting that there is no true peace without ecological links, respect for nature and human ecology (Morrison 2005).

From a peace education perspective, Hutchinson (2009) reflected on the links between peace, environmental and futures education arguing that "the direct and indirect environmental impacts, ... of unequal patterns of global consumption and bloated military budgets cannot be adequately understood by staying within the conventional disciplinary, interpretative frame of economics [and that] ... enhanced cross-disciplinary and cross-cultural dialogue are likely to be important". Hutchinson considers a "cross-cultural and inter-civilisational dialogue [as] crucial, including a greater awareness of Islamic, Confucian, Taoist and Buddhist knowledge traditions on peace and the environment".<sup>4</sup>

Special care must be given to post-conflict peace-building processes, where pollution and resource scarcity may create further conflicts and insecurities. Intra-state and inter-state cooperation is insufficient and the establishment of early warning systems and good governance are often lacking, which has threatened sustainable peace (Swain and Krampe 2011).

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<sup>2</sup> See: <http://www.jayhanson.us/page160.htm>.

<sup>3</sup> See for a summary by Tanya Glaser, <http://www.colorado.edu/conflict/peace/example/boul7525.htm>.

<sup>4</sup> Francis P. Hutchinson, 2009; "Reflections on the connections between peace education, environmental education, futures education" (March); at: [http://www.globalepe.org/article\\_view.php?aid=25](http://www.globalepe.org/article_view.php?aid=25).

### 1.3.2 Widening of the Security Concept Towards the Environment and Ecology

Since the end of the Cold War many peace researchers have significantly contributed to the discourse on the reconceptualization of security (Brauch et al. 2008, 2009, 2011), especially on its environmental dimension as ‘environmental security’ (Buzan et al. 1998; de Wilde 2008), ‘ecological security’ (Mische 1989, 1992, 1998), ‘green security’ (Käkönen 1994) and on the ‘environmental dimension of human security’ (Brauch 2005a, 2005b, 2009; Sygna et al. 2013) and on the environmental impact of war for environmental and comprehensive security (Westing 2013, 2013a).

### 1.3.3 Widening Ecology

The ecology concept has been conceptualized by many social scientists as ‘deep ecology’ (Leopold 1949; Naess 1973, 1989; Pepper 2002), ‘human ecology’ (Marsh 1864; Young 1974; *Human Ecology*<sup>5</sup>), ‘social ecology’ (Bookchin 1988, 2005), ‘ecofeminism’ (d’Eaubonne 1974; Mies, 1998; Shiva/Mies 1997), eco-Socialism’ (Pepper 2002a), ‘political ecology’ (Thone 1935) and ‘political geocology’ (Brauch et al. 2011).

‘Ecological Economics’ has evolved since the late 1980s when the *International Society for Ecological Economics* (ISEE)<sup>6</sup> was established with the statutory goal to advance “our understanding of the relationships among ecological, social, and economic systems and the application of this understanding to the mutual well-being of nature and people, especially of the most vulnerable, including future generations” (Norgaard 2002: 37). ISEE aims to facilitate “understanding between economists and ecologists and the integration of their thinking into a trans-discipline aimed at developing a sustainable world”, with a special focus on modeling, equity, indicators, limits to development, trade and development, valuation and policy instruments.

‘Human ecology’ (Young 1974; Douglas 2002) studies gradually evolved in geography, sociology, psychology, anthropology, zoology, epidemiology, public health, economics, and natural ecology examining the relationship between humans and their biophysical, social, and built environments. Marsh (1864) addressed in *Man and Nature* the ecological relations between humans and their urban environments. In its first edition (1973), the interdisciplinary journal *Human Ecology* referred to “genetic, physiological, and social adaptation to the environment and to environmental change”, including “social, cultural, and psychological

<sup>5</sup> See the website of the journal *Human Ecology* at: <http://www.hunter.cuny.edu/humaneco/>.

<sup>6</sup> See ISEE’s mission on its website: <http://www.isecoeco.org/> and at: (<http://www.isecoeco.org/about/cross-discipline-approach/>).

factors in the maintenance or disruption of ecosystems... interrelations of technological and environmental changes...the relation of food quality and quantity... and to demographic change”. Today problems facing individuals and how actors deal with their consequences at the individual level are also addressed. Research in *Human Ecology Review*<sup>7</sup> argues that the discourse has shifted toward applying principles of human ecology.

The ‘political ecology’ concept is used since the 1930s in human and development geography, anthropology and in ecology to explain “the political dynamics surrounding material and discursive struggles over the environment in the third world” (Bryant 1998: 80–89). It studies “the relationships between political, economic and social factors with environmental issues and changes” trying to politicize environmental phenomena. Some integrated it “with political economy (Peet and Watts 1996: 6)” studies on “degradation and marginalization, environmental conflict, conservation and control, and environmental identities and social movements (Robbins 2004: 14)”. Bryant and Bailey (1997) pointed to key assumptions of political ecology including the unequal distribution of costs and benefits that reinforce existing social and economic inequalities that have political implications. Human ecology required half a century until humans understood that global colonization resulted in a major ecological transformation.

Laferrière and Stoett (1999) discussed the debate on the linkages between *International Relations Theory and Ecological Thought* since the 1990s. They distinguished between *utilitarian ecology* (utilitarian anti-environmentalism, conservationism), *authoritarian ecology* (ecofascism, Gaia and misanthropic ecology) and *radical ecology* (deep ecology, social ecology, ecosocialism and ecofeminism) and reviewed the debate in IR on realism, liberalism and critical IR theory and ecology.

The ‘deep ecology’ concept was coined by Arne Naess (1973) considering humans as part of nature and of the earth and critiquing its abuse that prevailed in the Western worldview. Deep ecology calls for preserving natural diversity and calls for lifestyles that rely on “simplicity, frugality, self-reliance” and limits of the size of human population (Pepper 2002: 211).

‘Social ecology’ integrates “the study of human and natural ecosystems” focusing on the “relationship between culture and nature” (Pepper 2002a). Murray Bookchin (1990) conceptualized it “as a critique of current social, political, and anti-ecological trends, [that] espouses a reconstructive, ecological, communitarian, and ethical approach to society”. He argued that “social ecology advocates a reconstructive and transformative outlook on social and environmental issues, and promotes a directly democratic, confederal politics. As a body of ideas, social ecology envisions a moral economy that moves beyond scarcity and hierarchy, toward a world that reharmonizes human communities with the natural world,

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<sup>7</sup> See the website of the journal *Human Ecology Review*, at: <http://www.humanecologyreview.org/>.

while celebrating diversity, creativity and freedom” (Bookchin 2005: 85–87).<sup>8</sup> In Pepper’s interpretation (2002a: 484) Bookchin’s approach does not prioritize nature over human society and it sees “humankind as evolution’s highest expression, e.g. nature’s consciousness, so human transformation of nature is natural and desirable”. Research and training, institutes and degree programmes, scientific associations and research programmes on ‘social ecology’ have been set up in the USA (*Institute on Social Ecology* [ISE]<sup>9</sup>), in the UK (Social Ecology London<sup>10</sup>) and in Germany (since 1989: *Institut für Sozialökologische Forschung*, Frankfurt [ISOE]<sup>11</sup>) and the research programme on *social ecological research* funded by the German Federal Ministry on Research and Education (BMBF).<sup>12</sup>

The term ‘ecofeminism’ was introduced by Françoise d’Eaubonne (1974) “to call attention to women’s potential to bring about an ecological revolution” and it now refers to “interdisciplinary perspectives on the inextricable interconnections among human systems of unjustified domination—both of humans and earth” (Warren 2002: 218). Environmental philosophy with a gender perspective is a novel systemic approach to a complex reality from critical, interdisciplinary and constructivist perspectives. Alice Irene Bugallo (s/d) argues that environmental philosophy or ecophilosophy not only highlight current environmental problems but are associated with values, cultural and economic patterns and styles, which the more affluent societies or groups should seriously reconsider. To deconstruct this dominant model and reconstruct a comprehensive and sustainable scientific concept from a gender perspective, different theoretical and empirical approaches challenged the positivist androcentric Western liberal vision of the world, such as epistemological feminism, empirical feminism, postmodern feminism and point of view feminism. These theoretical approaches refer to empowerment and liberation from the shackles of patriarchy and therefore have questioned the liberal and neoliberal worldview of business-as-usual. Ecofeminists (Mies 1998; Bennhold-Thomsen and Mies 1999; Oswald Spring 1999, 2009) linked the mechanisms of oppression of women to the exploitation of nature.

Reardon (1996, 2014) was among the first feminists analysing the links among patriarchy, culture of war, authoritarianism and violence. The symbolic distribution space assigned to the predominantly male public and of the economic output

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<sup>8</sup> Bookchin, Murray, 2005: *The Ecology of Freedom: The Emergence and Dissolution of Hierarchy* (Oakland: AK Press): 85–87.

<sup>9</sup> See: ISE, Prescott College, NY, USA <http://www.social-ecology.org/about/about-the-ise/>, which offers an extensive bibliography of Bookchin: <http://www.social-ecology.org/learn/published-books/>.

<sup>10</sup> See at: <http://socialecologylondon.wordpress.com/> and a bibliography at: <http://socialecologylondon.wordpress.com/articles-and-reviews/>.

<sup>11</sup> See on ISO, Frankfurt at: [http://de.wikipedia.org/wiki/Institut\\_f%C3%BCr\\_sozial-%C3%B6kologische\\_Forschung](http://de.wikipedia.org/wiki/Institut_f%C3%BCr_sozial-%C3%B6kologische_Forschung) and direct at: <http://www.isoe.de/en/isoe/>; for its publications see at: <http://www.isoe.de/en/publications/>: especially: Becker and Jahn (2006).

<sup>12</sup> See for details at: <http://www.sozial-oekologische-forschung.org/> and a selected bibliography of the sponsored research: <http://www.sozial-oekologische-forschung.org/de/494.php>.

is the *res publica* and therefore became *homo sapiens*, while women were symbolically located in the private sphere or in the home and considered socially as *homo (dona) domesticus* (Lagarde 1992). Reardon analysed these antagonisms arguing that building security is based on peace education (Reardon and Nordland 1994), exposing the underlying power relations and the exercise of violence. She claimed that the deep roots of often subconscious violence are rooted in gender relations that emerged over thousands of years.

Barad (1999) established a bridge between descriptive and normative epistemology, and between naive realism and social constructivist approaches. She argued that all knowledge has practical, descriptive elements, where analytical components explain the phenomena globally. The outcomes of these critical ecophilosophical trends were systematized from a gender perspective in ‘deep ecology’, ecofeminism, social ecology, or different schools of environmental ethics. All assume some degree of criticism of anthropocentrism, biocentrism between shades and weak anthropocentrism. Speciesism is questioned (moral discrimination of individuals on the basis of the species to which they belong) by an anthropocentric understanding of nature, cornucopian overexploitation of Mother Earth and humankind.

Influenced by the debate on *landscape ecology* (Troll 1968). Huggett (1995) introduced ‘geoeology’ as an interdisciplinary natural science,<sup>13</sup> which he defined as the study of the “structure and function of geoeosystems” in different scales. Geoeology focuses on geoeological systems, their nature, hierarchical structure, and ideas about their interdependence and integrity, exploring internal or ‘ecological’ interactions between geoeosystems and their near-surface environment. Geoeology looks at the influence of climate, altitude, topography, insularity, and substrate including the role of external factors, both geological and cosmic, as agencies disturbing the dynamics of the geoeosystems. For Blumenstein et al. (2000: 9) geoeology “defines structures, functions and modes of action within geosystems or between them and their environment”. Geoeology draws both on the spatial sciences (geography, cartography, landscape and regional planning) and on the natural sciences, but it excludes effects of environmental degradation or environmental stress and their outcomes. They called for an integration of legal, social science and economic aspects but ignored the political dimension. While Huggett’s (2000) definition of geoeology combined geography with ecology, Stüdemann (2008: 9) defined geoeology as a holistic science whose objects are “geoeosystems and the images of all spatial and temporal structures of the geosphere. They are analysed with inventory process and structure analyses regarding systems stability and change and defined for an action maxim.”

But in this approach the political dimension is limited to environmental planning reflecting the requirements of sustainable development. It introduces landscape and geoeology into the development of environment policy, law and

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<sup>13</sup> See definition of ‘geoeology’ at: <http://www.answers.com/topic/geoeology>, based on: *Oxford Dictionary of Geography* (1992, 1997, 2004).

education and implementation strategies on the global level. But as other geoecological approaches, Stüdemann (2008) lacks a specific political dimension in his horizontal widening of the theoretical scope of geoecology including sustainability goals.

In 1998 the Latin American Centre of Social Ecology (*Centro Latino Americano de Ecología Social* [CLAES], Gudynas 1999) integrated geoecology with policy, with a strong emphasis on economic equality. This Centre supported strongly the World Social Forum in Porto Alegre, and in 2006 the *Centre for Development, Economy, Ecology and Equity* (D3E) in Latin America was set up, where geoecology and human ecology were key themes. During the Earth Summit in Rio de Janeiro (1992) the precautionary principle was systematically introduced into the geoecological thinking in Latin America (Cafferatta 2004).

Brauch (2003) argued that a *political geoecology* is needed that combines the divergent approaches of ‘geoecology’, ‘social ecology’ and ‘human ecology’.<sup>14</sup> Such a wider *political geoecology* must combine the complex causes and interactions of key factors of regional environmental change with environmental stress, natural disasters, distress migration, crises, and conflicts. Relying on the results of the natural sciences, *political geoecology* should also use methods of political science and international relations. Brauch et al. (2011) used the concept of a ‘political geoecology’ responding to earlier proposals by Alker and Haas (1993) for a new *ecopolitics* or by Dalby (2000, 2002, a, b) for an *ecological geopolitics*. While Dalby (2000) approached *eco-geopolitics* from critical geopolitics (1998) and challenged the framing of environmental matters in terms of national security, Brauch (2003, 2003a) argued that a *political geoecology* is needed that combines the regional implications of global change and its potential outcomes: disasters, environmentally-induced migration, crises, and conflicts, and Oswald (2008a) stressed the triggering factors and focused on social vulnerability. Adding climate into the discussion challenges the traditional meanings of security. It does so precisely because the new geopolitical context of the Anthropocene (Crutzen 2002, 2011) requires a forward looking, anticipatory understanding of security, not the old one that emphasizes monitoring borders, providing insurance or cleaning up after a disaster.

Political geoecology suggests a more explicit focus on ecology and also a clear indication that human choices are shaping the world of the future. The recognition of our actions emerges in many parts of the world as the debate about climate change suggests that our predecessors and ourselves have made in shaping the future condition of the biosphere. This terminology suggests the inapplicability of traditional geopolitical notions of an external environment for discussions of human security in the future. Brauch et al. (2011; Steffen et al. 2004) argued that the analysis of the security impacts of global environmental change in the Anthropocene requires the knowledge produced by both the *geoecology* programmes

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<sup>14</sup> This section is based on Brauch et al. (2011).

in physical geography, earth system science and numerous other disciplines, and by *social ecology* and *human ecology* approaches combining scientific efforts in geography, sociology, psychology and political science.

## 1.4 Linkages Between Peace and Ecology

While both the scientific peace and ecology concepts have significantly changed since the end of the Cold War, the scientific exchange between peace research and the different ecological approaches has been limited and most research occurred within the confinements of the respective research programmes. The conceptual bridge-building by Kenneth and Elise Boulding since the 1960s had few followers, while the policy debate and scientific research on the linkages between environment or ecology and security rapidly expanded (Brauch et al. 2008, 2009, 2011) first within national and international security but increasingly also in the context of human security (Sygna et al. 2013), which Oswald Spring et al. (2009) had suggested for the fourth phase of environmental security research.

With the shift of the focus of environmental security research from environmental scarcity, degradation and conflict (Homer-Dixon 1991, 1994, 1999; Bächler 1998, 1999; Bächler et al. 1996, 2002) to the dangers and concerns posed by global environmental and climate change, the debate focused again on the linkages from the perspective of national, international and human security (Brauch 2009; Scheffran et al. 2012; Gleditsch 2012). Since the 1970s, Westing (2013, 2013a) examined both the environmental impacts of war and made major conceptual contributions in the late 1980s to the development of environmental, comprehensive and human security.

After UNDP (1994) had launched the human security concept, the traditional narrow understanding of military and political security was widened to include the economic, societal and ecological security dimensions but also deepened to human and gender security from the household to the global context. With this widening and deepening of security its reference objects changed from sovereignty and territory to human beings and humankind. The values at risk shifted to identity, sustainability and survival, while the sources of threats changed from other states to global environmental change, regressive globalization and financial crises. Human beings are not only the producers of greenhouse gases (GHG) and waste but also the victims of increasing disasters (IPCC 2012).

With the direct impacts of humans upon ecosystems in the Anthropocene (Crutzen 2002, 2011) and with the progressive securitization of issues of global environmental change (GEC) during the past decade, these anthropogenic changes are increasingly threatening human lives and livelihoods, and may at some stage during this century be considered as a direct threat to international peace and security based on Art. 39 of the UN Charter, especially from the perspective of those Pacific Small Island Developing countries whose territorial survival is put at risk due to the projected sea-level rise in a 4 °C world (Nichols et al. 2011).

Worldwide, the destruction of the key ecosystem services, pollution of air, water and soil, land use change and anthropogenically-induced extreme events is creating new threats for Earth and humankind, especially for the most vulnerable in poor countries.

Reviewing the emerging global change discourse, Conca (1994: 20) suggested an “environmental agenda for peace studies” and a discussion on whether “ecologically desirable futures include concerns for peace and justice” arguing that it is not enough “to place ‘sustainable development’ and ‘ecological security’ alongside peace or social justice as ‘world-order values’” but that scholars must ask that “not only their formal definitions, but also their metaphorical and institutional associations, further the purposes of peace, justice, and community”.

Later, Conca (2002: 9) fundamentally challenged a core premise of the debate on environmental and ecological (in)security and conflict by asking “whether environmental cooperation can trigger broader forms of peace” by defining peace “as a continuum ranging from the absence of violent conflict to the inconceivability of violent conflict” by addressing also “problems of structural violence and social inequality” and by “building an imagined security community” based on peaceful conflict resolution. This work was indirectly inspired by Mitrany’s functionalist ideas where environmental cooperation “through cooperation in international environmental agreements” may foster “international peaceful behaviour”.

Conca et al. (2005: 150) called for “building peace through environmental cooperation” noting that “most environmental peacemaking initiatives fall into one of the three partially overlapping categories: efforts to prevent conflicts related directly to the environment, attempts to initiate and maintain dialogue between parties in conflict, and initiatives to create a sustainable base for peace”. They argued that environmental peacemaking may help “forestall environmentally induced conflict,... soften group grievances that ... are worsened by ecological injustices”, which is also identified as ‘negative peace’, while a second approach “moves beyond conflicts with a specifically environmental component, seeking to build peace through cooperative responses to shared environmental challenges”, thus partly aiming at ‘positive peace’.

UNEP’s activities on the environmental impact of war (Haavisto 2003), and the ENVSEC initiative (Cheterian 2009) in the Balkans, the Caucasus and Central Asia may have been inspired by concerns about environmental insecurity and hopes for environmental peacemaking.

## 1.5 Evolution of Peace Ecology

Influenced by both sides of the debate on environmental (in)security and peacemaking, Kyrou (2007) suggested a new ‘peace ecology’ (Sect. 1.5.1). After a brief critical review this concept will be jointly discussed with proposals for a political geocology for the Anthropocene (Sect. 1.5.2), before five conceptual pillars for a peace ecology approach will be outlined (Sect. 1.5.3).

### 1.5.1 *Introducing Peace Ecology*

Kyrou (2007) introduced the ‘peace ecology’ concept as an “integrative, multi-contextual, and case sensitive approach in identifying resources for conflict and violence transformation” with the goal “to include issues of conflict analysis and peacebuilding” into environmental studies. The concept emerged from the debate on ‘environmental security’ and ‘environmental peacemaking’. A shortcoming of this approach is “the lack of a common worldview and the absence of a shared philosophical space in relating ecology with peace”. Some applied ‘environmental peacemaking’ to ‘peace parks’ (Ali et al. 2005, Ali 2008, 2009), eco-museums (Davis 1999; Vietnam 2006), ecovillages (Bang 2005), peace museums (Yamane 2007) and cultural heritage sites either as “an environmental problem-solving” or as a “peace-building tool”.

Kyrou argues that peace ecology “applies a worldview approach to environmental peacemaking” where both people and the environment benefit from overcoming cultural violence against the environment resulting from “monolithic, mechanistic and unsustainable methods of resource extraction” or a business-as-usual approach, or ecological violence that refers “to the direct injury to the environment through pollution, degradation, overexploitation ..., especially in cases of severe or irreversible damage”. In his view, “peace ecology values the preservation and harmonious interaction of societies with the nature of peace; at the same time, it values a society striving to maintain positive peace as an ecological asset”. Peace ecology, he claims, links the value of biodiversity with that of cultural diversity and aims to protect the environment and to maintain the peace far into the future. Other elements of his peace ecology approach are bioregionalism, the ‘do-no-harm’ principle that aims at the “preservation of positive peace in society while maintaining ecological integrity”. He claims that “peace ecology places the environmental peace-making activities within the context of bioregions and examines their impact on various forms of violence”.

Kyrou (2007a) also introduced a *sustainable peace assessment method* (SPAM) for evaluating “the effectiveness of environmental peace making projects” in terms of a) “their potential in reducing or removing violence, of the qualitative and quantitative transformation”, b) “the qualitative and quantitative transformations that it may generate for each form of violence”, and c) “the degree in which the project may contribute to or reinforce a balanced and sustainable coexistence and interdependence between people and nature”. His SPAM should include five tools: (i) conflict assessment maps/guides; (ii) conflict-specific investigative tools, (iii) a SPAM archive, (iv) engagement with local communities and (v) a violence assessment matrix.

So far this ‘peace ecology’ approach has not been taken up and discussed by schools of peace and environment studies. In our view, peace ecology must be reconceptualized and this approach must be developed further by linking it to the political geology approach (Brauch et al. 2011).