PEACE ECOLOGY:
AN EMERGING PARADIGM IN PEACE STUDIES

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Abstract
This article explores the peacebuilding potential of the environment beyond "environmental problems" from the perspective of two interactive and interacting paradigms: peace studies and environmental studies. A thorough investigation reveals ontological, axiological, epistemological, rhetorical and methodological overlaps; interdependencies; conflicts and; potential synergism from their "interaction." It suggests a theoretical framework, broad and integrative enough to allow a full understanding, functionally as well as philosophically, of the inherent capacities of the environment to inform and sustain peace. The new paradigm, inspired by the idea of environmental peacemaking, is called Peace Ecology.

Introduction

This article develops a theoretical framework that is wide and integrative enough to allow a broader understanding, functionally as well as philosophically, of the inherent capacities of the environment to inform and sustain peace. The new paradigm, inspired by the idea of environmental peacemaking, is called *Peace Ecology*.

Following is a short review of the parallel history of environmental studies and peace studies. It tracks the utilization in peace studies of an increasing number of themes and disciplines on one hand, and on the other, recent themes within environmental studies that make the environment academically relevant to conflict and peace, such as environmental security, and environmental peacemaking.

It then compares the peace studies and environmental studies paradigms, allowing for a more thorough examination of the intersection points between the two and revealing the space that Peace Ecology covers as a new theoretical framework. These intersections are examined through categories pertinent to most paradigms including ontological, epistemological, axiological, rhetorical, and methodological assumptions (Creswell 1994). The assumptions pertinent to Peace Ecology are then summarized via comparisons and syntheses between peace studies and environmental studies (Kyrou 2005; 2006).

Finally, using the Peace Ecology assumptions as building blocks, it offers a broadly grounded definition of "environmental peacemaking" and suggests derivative hypotheses for future research. It provides a Peace Ecology perspective on research, one suited to an integrative, multi-contextual, and case sensitive approach in identifying resources for conflict and violence transformation, located at the interface of peace and ecology.

Peace Studies: A Continuously Growing Field

Although some claim that it was already a defined field of study as early as the 1950s and 1960s, most peace studies programs have been established in the United States since the 1970s (Ramsbotham, Woodhouse, and Miall 2005). Peace studies has always been inherently multi-disciplinary, served originally by fields such as sociology (Kriesberg 1978), anthropology (Rubinstein and Foster 1988), political science (Brecher and Wilkenfeld 1997), psychology (Fisher 1990), and international relations (Lerche and Said 1979). In growing recognition of the multi-dimensional nature of conflict, the field gradually expanded its affiliation with other disciplines in two distinct directions. On one hand, it benefited by integrating useful epistemological, methodological, and even axiological ingredients from emerging fields of study such as human rights, communication, religious studies, and cultural anthropology. On the other hand, peace studies itself, with its vast theoretical and practical repertoire, contributed to many professional and academic fields such as environmental studies, social work, medical studies, public policy, diplomacy, management, and business.

The intersection of peace studies and environmental studies, and, more specifically, the potential of the environment to support peace is a relatively new area of inquiry. It stems from developments within environmental studies that set the stage for extending its scope to include issues of conflict analysis and peacebuilding. While environmental conflict resolution has been an essential part of the environmental studies field for several decades, understanding the implications of the environment in terms of international security and peacebuilding has only been explored since the late 1980s when the concept of environmental security emerged.

From Environmental Security to Environmental Peacemaking

Beginning in the late 1980s, a series of publications, including Norman Mayer's *Ultimate Security* and Homer-Dixon and Blitt's edited volume *Ecoviolence*, ignited a debate on the link between the scarcity of environmental resources and regional violence. The debate led to the development of environmental security as a sub-field in political science, and several scholars and researchers focused on identifying regions of the planet

where environmental scarcity could trigger instability and threaten regional and global security (Myers 1993; Homer-Dixon and Blitt 1998; Klare 2002). It became clear over time that only under very special circumstances is the environment, on its own, a source of violent conflict (Homer-Dixon 2001). However, environmental scarcity was found to be a key component in escalating existing conflicts to violence (Peluso and Watts 2001). Though the work of Homer-Dixon and others remained focused on the environment as a source of contention, it prepared the ground for a variety of new understandings or how the environment relates to conflict.

Research seeking to understand the role of the environment in transforming the state and state-to-state relations, led to a new conceptual framework formalized by Ken Conca at the University of Maryland, and Geoffrey Dabelko of the Woodrow Wilson Center as "environmental peacemaking". In their edited volume Conca and Dabelko assert that "rather than seeking to pinpoint the environmental triggers of conflict, we are seeking to pinpoint the cooperative triggers of peace that shared environmental problems might make available" (Conca and Dabelko 2002: 5). This revolutionary idea ignited a plethora of research on a variety of issues relating to environmental problems and peace, especially in reference to transboundary environmental conservation.

Since 2002, environmental peacemaking has moved beyond a conceptual framework for analyzing the transformation of relations between nation-states and has come to be understood as a peace-building tool. The exploration of its use in peacebuilding is the subject of an ongoing discussion at the Environmental Change and Security Program at the Woodrow Wilson Center. Despite this, environmental peacemaking remains predominately engaged with the fields of political science and policy studies, and has had very little engagement with the fields of peace studies, conflict resolution, and mainstream environmental studies. Because of this, the philosophical underpinnings, and therefore the full potential of the methods and case studies analyzed have not been sufficiently explored. Among the sources of this developmental disharmony in shaping environmental peacemaking, one may identify incrementalism, a fixation with the "problem," and single sighted functionalism.

Incrementalism in Environmental Peacemaking

It is no surprise that environmental security focused primarily on environmental problems. According to Norman Myers (1993), "environmental problems can figure as causes of conflict. If we continue on our road to environmental ruin worldwide, they will likely become predominant causes of conflict in the decades ahead".

Those who joined the emerging field of environmental security arrived from a variety of backgrounds including political science, international relations, international security, wildlife management, agriculture, environmental economics, and micro-economics. However, they adopted the traditional security perspective that still guides the

work of researchers such as Homer-Dixon and Klare, and which currently informs the various agencies and research centers trying to predict the next environmental crisis and the potential effects on regional stability and security. Thus, the environmental security approach was and still remains, predictably policy-oriented with a realist view of security as its compass, and incremental—building itself case-by-case.

This predominantly realist view of the connection between the environment and security was challenged with the introduction of environmental peacemaking. It suggested a transformation of the concept of environmental security from the traditional competitive approach to a more relational approach of collaborative environmental problem-solving. We read from the introduction of the justifiably enthusiastic announcement of the new approach: "…construction has begun on a new framework that will permit scholars and policymakers to apply new tools, set new priorities, and organize *responses to a range of environmental threats to peace and security*" (Ehrlich, Gleick, and Conca 2000; emphasis added). Although the concept of security was now understood differently, the approach remained incremental. This incrementalist approach has since been reflected in almost all publications relating to environmental peacemaking.

What was missing from that groundbreaking publication—and the environmental peacemaking discourse in general—was some attempt to integrate theoretical and conceptual elements from peace studies into environmental peacemaking and the other way around. This omission produced unnecessarily restrictive criteria for the selection of cases reviewed in the book. More importantly, by not drawing on the strengths of both peace and environmental studies, the book failed to devise a strong conceptual tool for the robust evaluation of the cases from the peace as well as the ecological perspective. Just as with environmental security, the environmental peacemaking approach is constructed on a case-by-case basis with most scholars and researchers applying their own disciplinary background to justify, explain, and understand the processes and the substance behind environmental peacemaking. This persistent incrementalism is increasing confusion instead of providing clarity on the links between ecology and peace.

During the first workshop on environmental peacemaking at the University of Maryland in Fall 2003, one of the emerging issues was whether environmental peacemaking should assume an axiological position, that is, a worldview or even an ideology. Some asserted that science is impassionate and that any such attempt would contaminate the field before it even took off. The author used the example of peace studies to stress the importance of an axiological view. The adverse implications of the absence of a fully examined and identified underpinning worldview influencing environmental peacemaking are becoming increasingly clear in the attempts of contemporary authors to connect environmental activities such as transboundary parks and conservation projects to peace.

In an attempt to keep environmental peacemaking free of a worldview, scholars have deprived themselves of input from the two fields with the deepest understanding of what they purport to be studying. Therefore, instead of building a new framework on the

synergy of two fields representing two powerful worldviews and two well-established paradigms for evaluation, we are left with case-by-case studies that, through lack of definition, often leave it unclear how, if, or in what way either the environment or peace are affected.

For example, in an online discussion with the title *Parks for Peace or Peace for Parks? Issues in Practice and Policy* (Ali et al. 2005) sponsored by the Environmental Change and Security Program of the Woodrow Wilson International Program for Scholars, a series of exploratory papers were presented on the processes and practices of environmental peacemaking. Although most papers are at a draft-level at the time of this publication, they share the same problem: the lack of a common worldview and the absence of a shared philosophical space in relating ecology with peace.

The Problem with the "Problem."

Another limiting implication of incrementalism in environmental peacemaking is the central role assigned to the "environmental problem." In *State of the World 2005* Conca, Carius, and Dabelko provide a list of categories of environmental peacemaking projects. They assert that "most environmental peacemaking initiatives fall into one of three partially overlapping categories": 1) Efforts to prevent conflicts related directly to the environment; 2) Attempts to initiate and maintain dialogue between parties in conflict and; 3) Initiatives to create a sustainable basis for peace (Conca, Carius, and Dabelko 2005: 150). Yet, all of these categories refer to environmental problem solving.

The first category "may be action to forestall environmentally induced conflict" (Conca et al. 2005: 150). The second, includes building peace "through cooperative response to *shared environmental challenges*" (Conca et al. 2005: 151; emphasis added). The third category, the authors later explain, "recognizes that a robust peace will require a foundation of sustainability" (Conca et al. 2005: 152). And by sustainability the authors mean sustainable use of the environment, not the sustainable peace that author Johan Galtung describes from within the peace studies paradigm, which is to change and transform the structure of a conflict towards the direction of peace, development, and security (Galtung 1969). To explain further the third category, the authors conclude their examples with the following: "Where the water is a root cause of conflict, or merely exacerbates existing differences there will be no lasting peace without finding a sustainable water footing in the region" (Conca, Carius, and Dabelko 2005: 152).

Truly, on one hand, a great many environmental peacemaking activities are oriented towards facing some environmental challenge such as a threat to conservation, pollution, unsustainable development, and ecological degradation. On the other hand, many environmental practices with peacebuilding potential are completely independent of any "problem" that needs a solution. Practices and projects such as eco-museums (Davis 1999), environmental education, peace camps, ecovillages (Bang 2005), retreats,

as well as eco-cultural resources expressed through visual and performing arts, literature, and experiential education (Castellana 2004) are not necessarily connected to any particular environmental problem—they are informed by the relationship of humans with the environment itself.

Some eco-museums and cultural heritage sites serve as healing grounds for decades after the war is over. The PeaceTrees Vietnam project at the PeaceTrees Vietnam Friendship Village—"the site of a former fiery battleground" —is considered to provide healing and reconciliation opportunities to veterans of all sides from the Vietnam War (Vietnam 2006). The Ha Long Ecomuseum—under development—is expected to "provide a focus for facilitating productive relationships for collaboration, cultural exchange and enrichment of the 'culture in development' paradigm" (Galla 2002: 63).

Other activities stand even further from the traditional "problem-centered" or "resource-centered" environmental peacemaking view. Israeli, Arabs and Jews, frequently visit the Auschwitz I concentration camp in Poland, which is considered by UNESCO (United Nations Educational, Scientific and Cultural Organization) a world heritage site, as part of the dialogue for reconciliation between the two communities (Scislowska 2003). The Hiroshima Peace Memorial Museum was built to serve the objectives of the Hiroshima Peace Culture Foundation, which are: *"...to convey that experience (the Hiroshima's A-bomb experience) and to contribute to the dissemination of peace thought and international understanding and cooperation, and thereby to contribute to the creation of world peace and the betterment of human welfare, from a global perspective"* (Foundation 2006).

Simply gathering a wide variety of themes and practices may contribute very little to our study of the capacity of the environment to sustain peace if our focus remains limited to only a few selected utilities or functions of these themes and practices.

Limits of Single-Sighted Functionalism

So far the majority of environmental peacemaking analyses have focused on policy transformation through the handling of one or another environmental problem. Success is measured based on policy expectations from particular projects rather than on broader, self-informed values and objectives. For projects with an emphasis on resource management, for example, analysis is usually focused on the degree to which the project met the particular functional objectives it was designed to achieve. If a project is designed to protect primates, the focus of analysis will be narrowed to measure the primate population with only a peripheral focus on the project's peace/conflict implications. Likewise, the recent, and at this point mostly unpublished, work focused on the peacebuilding effectiveness of environmental projects, places priority on the peacebuilding components, delivering only a peripheral view of the derivative environmental successes or failures. As a result, our understanding of environmental

peacemaking is built either through examining the environmental and policy impacts with a very limited view of the peace/conflict component or from peace and conflict analyses with little attention paid to the environmental implications. This unbalanced approach confines our view of environmental peacemaking as either an environmental problem-solving tool or a peace-building tool. What is missing is an approach that explores the possibilities intrinsic to the intersection of the environment and peacemaking.

A new, broader, more holistic paradigm is needed; one that supports and sustains the idea of environmental peacemaking representing a shared epistemological, rhetorical, methodological, and definitely ontological and axiological agenda. Only through the process of defining such a paradigm will we develop appropriate instrumentation that evaluates the full ecological and peacebuilding potential of environmental projects and practices.

Towards Peace Ecology

The paradigm of Peace Ecology applies a worldview approach to environmental peacemaking. It holistically makes the case for the long-term benefits of an environmental consciousness combined with a peace consciousness instead of an unguided effort at tracing the circumstantial, and amorphous 'peace revenues' from individual environmental projects. Peace Ecology creates conceptual space for looking at the peacebuilding potential of environmental practices and projects regardless of whether they are driven by problem solving or by a worldview; whether they focus on some task at hand or on human consciousness.

Peace Ecology: The Worldview Underpinning Environmental Peacemaking

Peace studies and environmental studies share a great deal of common ground in terms of their ontological, epistemological, axiological, rhetorical and methodological assumptions. The new paradigm of Peace Ecology, inspired by the idea of environmental peacemaking, provides space for substantial integration between the two fields of study. This integration is examined here by exploring the overlap and synthesis of these categories in peace and environmental studies.

Ontological Assumptions (What Is)

There is an inevitable and total interconnectedness of life through nature. Regardless of our individual circumstances, while in conflict or otherwise, we participate in the same basic complex web of interconnected ecological cycles. We breath from its air, drink from its water, are subject to and depend on its climate. We extract from it

materials for utility and basic survival. There we find our spiritual resources, draw our inspiration for art, and even the raw materials of which our dreams and myths are made. They all originate from the same complex ecological web.

The world is continuously changing with time. Conflict is an inevitable by-product of change, which can be either destructive or constructive (Kriesberg 1998). Conflict may drive a society towards positive or negative peace, or towards violence (Galtung 1996). Conflict is a multi-contextual system of linked and interdependent dynamic processes and structures (Kyrou and Spenser 2001). Societies practicing a variety of conflict management skills and maintaining a high capacity to solve problems non-violently are more likely to benefit from the constructive effects of conflict than societies that are deprived of such resources.

Informed by peace studies, we recognize that violence takes many forms, including physical, structural, cultural, epistemic, psychological, ecological, and time (Galtung 1996; Bastien et al. 2003). Filtering this through our awareness of environmental studies we recognize that all forms of violence have human and well as environmental costs.

More specifically, in the case of direct or physical violence, victims include both people and the environment. Environmental degradation due to violent conflict leaves societies crippled, dealing with the effects of war far after the end of physical violence (Lanier-Graham 1993). The impacts of war on the environment do not end with a cease-fire; they persist for decades due to demolished infrastructure, movement of refugees and internally displaced people, the remaining risks from hazards such as mines and depleted uranium, and the political shortcomings of reconstruction. Due to relocation or simply from direct destruction of the environment, especially in urban settings, people lose their sense of place, a vital indicator of quality of life as Fried's work demonstrated in the 1960s (Fried 1963).

Structural violence takes place when laws, formal institutions and cultural or societal structures and processes discriminate against particular groups of people based on traits such as gender, skin color, or ethnic background. The Apartheid regime in South Africa is an accurate example. Forms of structural violence encountered in environmental studies most frequently include laws, institutions and practices discriminating against indigenous peoples, minorities, the powerless, and by extension biodiversity and the environment in general.

Cultural violence manifests itself in two ways. First, as a general attitude expressed by a culture that violence is an acceptable, or even a preferred, method of conflict management. The environment has historically been targeted as a means of affecting or even destroying entire ethnic groups that may directly depend on its resources. The destruction of the buffalo as an acceptable means of resolving the Native American "problem" is a good example. Violence against the environment may also result from monolithic, mechanistic and unsustainable methods of resource exploitation that are viewed as "business as usual" in a variety of human activities from individual to

complex industrial applications. The second way cultural violence can manifest is, as culturally based attitudes and/or acts of discrimination against others based on religion, ethnicity, color, gender, or ideological orientation. A common concept affiliated with this type of cultural violence in environmental studies is that of environmental racism; the racial discrimination embedded on the planning and implementation of environmental policy.

Epistemic violence takes place when the means of a culture for knowing and communicating such as language or symbolic systems, are being systematically damaged, altered, or censored (Bastien et al. 2003). With restrictions on language, knowledge of the environment can be irreversibly lost; names of plants and animals can be forgotten; and centuries of knowledge of eco-systemic processes can be erased within a few decades. Where languages and epistemologies of traditional peoples reinforce their collective commitment to their relationship with nature, loss of these linguistic and symbolic resources can alienate them from their own cultural foundations.

Psychological violence happens when certain practices and methods applied during conflict have caused individual and/or collective psychological trauma to people. Psychological violence has mostly an indirect impact on the environment. For example, refugees and internally displaced peoples (IDPs) in their struggle for safety may seek refuge in areas of fragile ecosystems. The impact of these population movements can cause irreversible damage to the environment. Because traumatized populations are reluctant to return to a location where traumatic experiences took place, the adverse impact on areas used as refuges can be prolonged or even become permanent.

Ecological violence is directly related to environmental studies and refers to the direct injury to the environment through pollution, degradation, overexploitation, and other forms of injury, especially in cases of severe or irreversible damage.

Time violence refers to intergenerational conflict—the victimization of future generations due to today's practices and behaviors. Intergenerational conflict is central to environmental studies and an integral issue in almost every aspect of the policy making process.

All of these forms of violence combine to form a broad vision of what a peaceful society embodies. A mere lack of physical violence, known as negative peace, is an unstable system ready to drift back to physical violence. However, a system that transforms conflict constructively by constantly alleviating all forms of violence (cultural and structural) is more stable, characterized as "positive peace" (Galtung 1996). It is this multi-dimensional and sustainable peace that Peace Ecology promotes.

Axiological Assumptions (Studying the Value or Quality)

Peace Ecology values the preservation and harmonious interaction of societies with nature as peace; at the same time, it values a society striving to maintain positive peace as an ecological asset. We find direct evidence of these axiological assumptions

available both in Galtung's writings about ecological violence (Galtung 1996) and in literature on the effects of violent conflict on the environment (Hay-Edie 2002). The path of *non-violence* is preferred, as violence is considered harmful to human beings and the environment.

In Peace Ecology, the value of *bio-diversity* is intimately linked with the value of *cultural diversity*. Nabhan (1997: 5) writes, "natural diversity and cultural diversity share the same patterns of distribution across the face of Earth, and enrich our lives in many of the same ways". Ecosystems with high bio-diversity host a greater number of cultures. Each culture may practice effective methods and carry important knowledge of how to deal with nature harmoniously. In terms of peace, each one of these cultures most likely carries its own system and techniques for dealing with conflict non-violently. With the current high rates of destruction of bio-diversity comes a similarly rapid destruction of cultural diversity, usually simultaneously, and in the same regions.

The principles of interconnectedness, but especially that of *interdependence*, shared by both the peace and the ecological paradigms, extends human responsibility in terms of protecting the environment and maintaining peace far into the future. "Time violence" defined by Galtung refers to the damage to future generations from today's failure to deal with conflict non-violently. The term "intergenerational inequity" in environmental studies literature (Mintzer and Michel 2001) refers to the adverse ecological impact on the future generations from the unwise use of the environment by today's societies. Therefore, the principle of *sustainability* carries value both in the ecological and the peace paradigms and is central to Peace Ecology.

According to Tim Ingold nature as "*place*" is a culturally constructed form of space—therefore carrying significant value as a vehicle of culture—and is its own disseminator of meaning (Ingold 2000; Butz and Eyles 1997). This means that the idea of place carries significant value as a source of culture. Cultures sharing the same bioregion—a region defined by ecological instead of political boundaries—are informed by the same source of meaning that derives from "place." In other worlds the environment as "place" carries value both as a foundation for peace and as an eco-system. Cultures and nature are involved not only in a material but also in a cultural cycle of exchange. The well-documented influence of place on children (Sobel 1998, 2002; Vickers and Mathews 2002) adds to its importance as an axiological component of Peace Ecology.

Bioregionalism, as stated above, is a view of the world defined not by political borders but by ecological borders between distinct ecosystems or "bioregions." Bioregionalism suggests a shared identity among people who live in the same ecosystem. As political borders are usually drawn along mountains, lakes, rivers, wetlands, forests, and such, people are usually divided by the very defining features of the eco-systems that they share. The positive aspect of this paradox is that bioregions present great opportunities for transboundary collaboration in preserving and interacting with nature. The concept of "peace parks" which entails the establishment of a transboundary

ecosystem as a natural preserve for the sake of eco-tourism (Dallen 1999) or conservation (Roy 2000)—or both—is an example of such transboundary collaboration. Bioregionalism makes explicit the shared and common identities between people on opposite sides of political borders. These identities are informed and reinforced by shared themes related to their environment, such as conservation, environmental quality, recreation, education, arts, memory, and heritage. To the degree that such shared identities function as agents of peace, bioregionalism is of great value to Peace Ecology.

Finally, another important axiological component of Peace Ecology is the *"do-no-harm"* principle. For conflict resolution practitioners, it is meant to imply the sensitivity on behalf of the practitioner to human suffering, to the local culture and customs, to the human condition in general, and most of all, to remind the practitioner of the great responsibility that comes with a peace intervention. In environmental practice, it is meant to imply sensitivity on behalf of the practitioner to the ecosystem's tolerance against human intervention and to the fragility of the balance in chemical, biological, and ecological cycles of life. Furthermore, it is meant to remind the practitioner of the responsibility that comes with managing the environment. In Peace Ecology, all of the above meanings of "do-no-harm" apply simultaneously at every level of an environmental peace activity, from designing methodological tools for pre-evaluation of projects and practices, to implementing those together with the local populations and eco-systems.

Peace Ecology provides space for a fertile dialectic process between the ecological paradigm and the peace paradigm. However, both paradigms carry their own negative dialectics. For example, is it moral to intervene in every conflict? Should we always maintain impartiality? Should we use violence to stop violence? Is it enough that the parties agree or should nature be considered itself a party of interest? Do people or does nature come first? Do animals have rights? It is important to consider these questions in Peace Ecology as they may interfere with or even undermine its main objective—the preservation of positive peace in society while maintaining ecological integrity.

To sum up the basic axiological assumptions of Peace Ecology we state that: The world is subject to constant change, therefore conflict and environmental stress are inevitable. Peace and ecology are directly interconnected, and interdependent and there are several types of violence (physical, structural, cultural, epistemic, psychological, ecological, and time) that determine whether a society is leaning towards peace or the opposite. A society subjecting its members to violence deprives itself of the prospect of maximizing its own societal and environmental potential.

Without considering the axiological underpinnings of peace and ecology, environmental peacemaking projects remain limited to their instrumental role, projecting no additional value to the populations they affect, or to the world in general. The paradigm of Peace Ecology provides the map and compass for an environmental peacemaking of rich substance and enhanced purpose.

Epistemological Assumptions (How We Know What We Know)

The epistemological assumptions of Peace Ecology are built on Johan Galtung's epistemic framework based on his theory of conflict (Galtung 1996; Ramsbotham, Woodhouse, and Miall 2005). While it resembles strongly that of the predominately constructivist peace studies, there is, synergistically, a significant contribution from the positivist environmental and social science traditions in the new paradigm. Figure 1 provides a visual representation of the epistemology of Peace Ecology.

DATA with emphasis on eco-cultural, geographical, environmental, resources assessment, distribution monitoring, demographics, refugee and IDPs movement, environmental assessment tools

Empiricism, with emphasis on Environmental Science, Resource Management, Environmental Economics, Ecology, Indigenous and Minority Politics.

Critical Theory with emphasis on eco-philosophy, eco-feminism, eco-violence.

PEACE & ENVIRONMENT

THEORIES with emphasis on conflict studies and environmental studies, Galtung, Saunders, Gandhi, Gene Sharp, Homer-Dixon and others

Constructivism
Modeling, Project Design, Policy Recommendations

VALUES with emphasis on bioregionalism, sustainability, re-inhabitation, appropriate technology, cultural and biological diversity, indigenous people's rights, Deep Ecology etc.
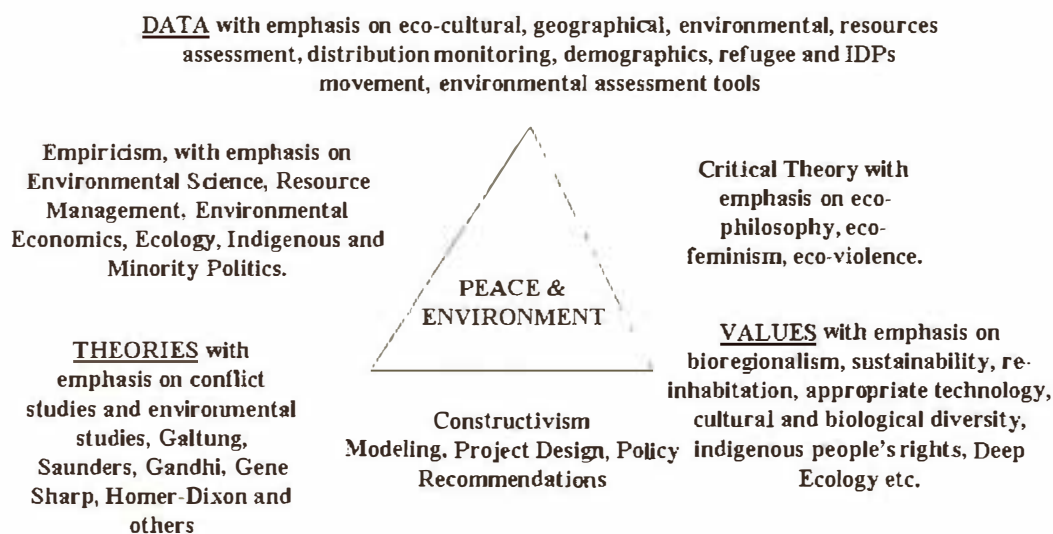
Figure 1: A Visual Representation of the Epistemology of Peace Ecology

Following Galtung, the model combines *critical theory* (social theory oriented toward critiquing and changing society as a whole) with *empiricism/positivism* (all human knowledge ultimately comes from the senses and from experience/ all factual knowledge is based on the "positive" information gathered from observable experience), and *constructivism* (reality, or at least our knowledge of it, is a value-laden subjective construction rather than a passive acquisition of objective features). Resulting theories are empirically supported by data *and* informed by values. Critical theory covers from realism to marxism, to eco-feminism, and green anarchism. Constructivism characterizes both the ecological, and the peace-related nexus and lexus.

Peace Ecology creates a space in which diverse and distant epistemologies co-exist. In Peace Ecology the reason-centered western way of knowing combines synergistically with nature-centered animistic epistemologies. This serves to expand our understanding of our place in the universe as philosophers and as medicine-men/women. A people's epistemology is an irrepleacable resource in defining its own path to peace.

Just as much, it is the only guarantor for its ecologicaly sustainable survival and harmonious relationship with its eco-habitat.

Given our understanding of the relatedness of peace and the environment, an epistemology that includes an understanding of the relationship of people to their eco-habitat ensures that the path to peace is not compartmentalized, degrading both the chances for peace and ecological sustainablility. Expanding our epistemology to include diverse ways of knowing increases our understanding of how to achieve ecologicaly sustainable survival for all.

Rhetorical Assumptions (Preferred Use of Language)

Overall, the exchange in terminology and definitions between the two paradigms has been unsuccessful. Environmental security and later environmental peacemaking opened a narrow window for exchange. However, due, on one hand to the incrementalist and positivist culture of environmental security and peacemaking, and on the other to the heavy philosophical and constructivist nature of peace studies, the interaction between the fields in terms of developing a shared rhetorical pool remains limited. A few key concepts dropped here and there in environmental and peace literature such as "resource scarcity," "intercultural dialogue," "collaboration and understanding," or "environmental issues," do not express the full potential for a shared lexicon. In the absence of a common paradigm, such as Peace Ecology, these terms will continue to be used as clichés instead of representing a unified conceptual understanding between environment and peace.

There is no reason for the shared rhetorical space of the two fields to remain at such a shallow level as both disciplines are seasoned in dealing and interacting with a vast array of ontological and epistemological systems ranging from western philosophy to the, so-called, traditional forms of wisdom.

The contribution of anthropology and ethnographic methods in peace studies has helped create a culture of tolerance and even affection towards epistemic diversity within the field. At the same time, the axiological alliance between environmental scientists and activists with many indigenous peoples over issues of bio-diversity, conservation, and sustainable development, has also shaped a culture of understanding and inquisitiveness for a multitude of epistemological models.

Interestingly, in the world of grassroots' activism, the rhetorical merge between peace and environment has so far been neither problematic nor cautious. As early as the 1980s German, French and Belgian Greens were marching for peace in recognition of the inseparable links between peace and ecology. The popular motto "think globally, act locally" is still being used interchangeably to call for protection of the environment and for world peace. Concepts such as "mother nature," "Gaia," "our planet," "interdependency" and even "ecology" all symbolically assert the fundamental meaning of the peace studies axiom that peace relies on a multi-layered context, a system of values, institutions, norms, and behaviors, which we often refer to as a "culture of peace." These

terms express a shared understanding that stretches from the individual all the way to the global community.

In Peace Ecology the preferred use of language is one that reflects the tolerance for epistemic, cultural, spiritual, societal, as well as ecological diversity.

Methodological Assumptions (Preferred Set of Methods)

Moving beyond the incrementalist approach to environmental peacemaking requires a broader, deeper, holistic, and dynamic methodological approach, one that creates space for the integration of all possible environmental peacemaking resources available within any bioregion or even the biosphere. The approach must have the capacity to handle projects and practices as diverse as transboundary conservation projects, cleanups, and environmental quality monitoring projects but also environmental education projects, art exhibits and festivals, and eco-museums. Additionally it must be able to examine cases at all stages--design, implementation, evaluation of implementation—and to analyze historical as well as ongoing cases.

A versatile methodological approach deriving from methodological intersections between environmental and peace studies serves the demands of Peace Ecology for a highly sensitive, multi-level inquiry for understanding and analyzing in depth the promises of environmental peacemaking. It also assists in identifying and designing projects that concurrently maximize peacebuilding and environmental effects (socially as well as ecologically). Further, a comprehensive methodological approach allows researchers and practitioners to evaluate and monitor projects and finally, to explore the transferability of projects to other regions.

The impact of Peace Ecology is tested simultaneously in two ways: first, for its capacity to maintain ecological integrity with humans residing responsibly in and as part of nature and; second, for its effectiveness in managing conflicts constructively while eliminating the various forms of violence. Failure to achieve the first goal is considered automatically a failure to realize the second, and vice versa. For example a project such as eco-tourism that may reduce certain forms of violence but fails to protect the integrity of the local ecosystem is considered an inherently violent practice, for it only succeeds in transferring the weight from one form of violence to another. Likewise, a project such as a peace park that succeeds in preserving the local ecosystem but intensifies old, or generates new forms of social violence, is also considered an inherently violent practice.

A methodological overlap between the two paradigms makes Peace Ecology very versatile in dealing with peacebuilding-through-the-environment at the explanatory, descriptive, evaluative, predictive, and policymaking levels. Assessment tools from conflict analysis such as the conflict assessment guide by Wilmot and Hocker (2005), combined with specialized matrices such as the environmental context assessment map (Kyrou 2007), built by the author to investigate various ecological components of a conflict, can be embedded in any environmental peacemaking case study.

Evaluative models based on the ontology of peace studies, such as the categories of violence described earlier, provide conceptual material for effectively evaluating the peacemaking capacity of environmental peacemaking practices and/or projects. When combined with environmental assessment tools the complex and rich picture that emerges is more useful for understanding in depth the implications of environmental peacemaking.

Re-Defining Environmental Peacemaking / Derivative Hypotheses

Informed by the paradigm of Peace Ecology, environmental peacemaking can now be re-defined as "*The identification, and utilization of opportunities, from the natural and human environment, for building bridges of communication and collaboration among parties in conflict*" (Kyrou 2005; 2006).

A series of assertions/hypotheses derive from the new definition for future research:

1) An environmental problem is not necessary for environmental peacemaking to assist parties in addressing their conflict. Values, interests, worldviews, ideologies and theologies relating to the environment should also be considered as potential sources for collaboration and peacemaking.

2) Environmental peacemaking can apply from the international level down to the neighborhood level. It is as potent for nation-state peacebuilding as it is for community empowerment.

3) Environmental peacemaking should not exploit environmental problems that may already exist as sources of serious contention between the parties in a given conflict.

4) Environmental peacemaking should adopt a broad definition of the concept of "environment" to include, for example, sense of place, ecological values, and cultural-ecological heritage.

The Peace Ecology Approach

Peace Ecology places environmental peacemaking activities and projects within the context of bioregions and examines their impact on various forms of violence. It suggests that peace and ecology can and should be evaluated as interdependent concepts. Operationally it suggests a sensitive approach, considering the type of society, ecosystem, and conflicts that such projects are expected to influence. It does not presume that effective environmental projects will necessarily lead to peace nor vice versa. Nor does it assume that cooperation in an environmental peacemaking project suggests a pre-determined peaceful or any other transformation of the society in which the project is implemented.

Peace Ecology suggests that in terms of violence and conflict, there are important transformative resources at the interface of peace and ecology. These are very complex and difficult to measure and require a clear understanding of how peace and ecology merge conceptually to synergistically transform society. The development of any relevant rescarch tool entails a deep inquiry into the normative models of both peace studies, and environmental studies. Moreover, concepts from each model should not be understood and treated as separate, but instead as enhanced, and improved by each other, synergistically functioning as a new and independent paradigm.

Conclusion

This article introduced Peace Ecology as a new paradigm standing at the intersection of peace studies and environmental studies. Peace Ecology asserts the underpinning values of environmental peacemaking: the use of the environment in building bridges of collaboration between parties in conflict. In order to more specifically identify those values this article offered a comprehensive yet far from an exhaustive analysis of the various assumptions from peace and environmental studies at their most potent theoretical meeting points.

Peace Ecology is built on key concepts such as bioregionalism, place, sustainability and interconnectedness and leads to a new definition for environmental peacemaking, and a new methodological approach to identifying and measuring resources for the transformation of conflict and violence located at the intersection of peace and ecology.

In order for us to understand the transformative potential of environmental peacemaking projects and practices, we first need to understand the type of society we envision as a result of what we would consider an "effective" environmental peacemaking project. Without such a model, we can only measure the value of projects based on their effectiveness in reaching narrow and self-defined policy goals viewed in terms of either their effect on the environment or peace.

The Peace Ecology paradigm, built on the combined vision of peace and environmental studies, gives us a broader context in which we can configure and evaluate environmental peacemaking more precisely. By defining the ontological and axiological assumptions that guide environmental peacemaking we are able to more clearly understand the degree to which a given environmental practice will facilitate the transformation of a society afflicted by violent conflict and ecological degradation. This also enables us to develop the complex methodological tools required for understanding the interactive effects at the intersection of peace and ecology.

Without Peace Ecology, without a vision of the transformed society we are aiming to create through our work—of a society capable of dealing with change constructively and non-violently; one that sustains positive peace over time; that exists as a fully

integrated component of an ecologically healthy environment—we may be able to say that a given environmental peacemaking project has an effect, but the comprehensive effects and to what end they are leading cannot be determined.

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