

There is a confusing tangle of words about the several psychological disciplines related to the environment – environmental psychology, ecological psychology, conservation psychology, human ecology. It is not just confusing for outsiders: When communicating among themselves, psychologists need to explain what they mean because different writers have used these words in different ways. These diverse fields all have one common feature; they are in the mainstream of academic social psychology. They all privilege experiments and other controlled quantitative research over qualitative research and they elevate all kinds of research above anecdotal evidence, clinical experience, opinion, narrative, and philosophy.

Ecopsychology has come from different traditions. The diverse pioneers in the field arrived at ecopsychology from humanistic and transpersonal psychology, experiential environmental education, scientific ecology, systems thinking, and deep ecology. As a result, the field has been much more interdisciplinary than the inclusion of "psychology" in the coined word suggests. Ecopsychologists have drawn freely from anthropology, sociology, history, nature writing, poetry, and various spiritual traditions (especially Buddhism and those of indigenous North Americans) as well as from diverse schools of psychology. Some of this diversity may be seen in the chapters of *Ecopsychology:* Restoring the Earth, Healing the Mind (Roszak Gomes, and Kanner 1995) and Ecotherapy: Healing with Nature in Mind (Buzzell and Chalquist 2009), the online magazine Gatherings: Journal of the International Community for Ecopsychology, and articles in various journals, notably The Trumpeter: Journal of Ecosophy.

Historically, psychology has experienced a similar division between scientifically-oriented cognitive and behavioral perspectives, on the one hand, and clinically-oriented humanistic and psychodynamic approaches, on the other. There have been ongoing efforts on the part of the scientific psychology community to either discredit or absorb the clinical community. In recent years the use of outcome research to show therapeutic effectiveness and an increasing acceptance of qualitative

research have helped to bridge the divide, but therapists still assert that reductionist research cannot capture the richness of the therapeutic process and some scientists still question the value of psychotherapy and the validity of the theories that inform it.

Ecopsychology: Science, Totems, and the Technological Species is an attempt to bridge this divide as it plays out between ecopsychology and scientific environmental psychology. In the introduction to this collection of papers, editors Peter Kahn and Patricia Hasback express their belief that ecopsychology "has lost energy" (7) and that they hope to reinvigorate the field. In their view, "the part of environmental psychology that focuses on nature and all of conservation psychology comes under the auspices of a revisioned ecopsychology" (7).

They distinguish the scientific understanding of the human-nature and human-technology relationships from the "totemic" feelings of grandeur, awe, and humility that might be aroused by experiences in nature and that have been central to ecopsychology. They tell us that "the Paleolithic years were marked by totems" (12) and that, in the past, ecopsychology was totemic rather than scientific.

The notion that ecopsychology has not been scientific is denied in the very clear account of ecopsychology presented by Andy Fisher in the third article in this collection, "What is Ecopsychology: A Radical View" (78-114). Fisher sees ecopsychology as including, but not being limited to, a natural science way of knowing. For Fisher, ecopsychology is "radical" in the sense of going to the roots of the human relationship to nature, turning the psyche inside out. Drawing on hermeneutics and phenomenology, he argues for a multidisciplinary (or nondisciplinary) ecopsychology based on subjective experience and recognizing the interiority of all nature. Through poetic dwelling we can recover meaning in the natural world. This leads Fisher to a radical critique not only of psychology but of our cultural and economic systems which he sees as being based on the exploitation of an unconscious universe. Nature is not something "over there" which we can connect to

or exploit, but something from which we cannot be separated. Ecology has been described as a subversive discipline, and Fisher sees ecopsychology as a subversive psychology, rejecting the materialism and reductionism of psychology as a natural science.

Not surprisingly, another view is found in an article by Kahn, Ruckert, and Hasback. "A Natural Language" (55-77). They suggest a typology of human-nature interactions (Wild, Domestic, and Perverse), a language for describing these interactions, and steps that might be taken to establish the validity of their descriptions. While ecopsychology has focused on subjective, first-person accounts of the experience of nature, this article proposes a third-person language, with a privileged observer watching both the human and the natural world with which they are interacting. This chapter provides a clear example of what a more scientific, dualistic, and positivist ecopsychology might be like.

"Building the Science Base: Ecopsychology Meets Clinical Epidemiology" (142-172) by

Howard Frumkin reviews the research on the health benefits of connecting with nature. There is strong evidence that contact with animals and with plants and green spaces are good for people's mental and physical health. The evidence for the benefits of wilderness experience is less convincing. Frumkin provides a lucid explanation of the "gold standard" in clinical epidemiology; the randomized double blind study. But he then explains how ecopsychological research is unable to achieve this standard because both researchers and subjects know when they are outdoors or with their pet. He gives six limits to epidemiological research in ecopsychology. Among the limits are the difficulty of quantifying "nature rapture" and our limited understanding of the mechanism by which nature benefits health. But unlike many medical treatments, the risks of connecting with nature are small, so perhaps the standard of proof does not need to be as high. The benefits may be so obvious that research is unnecessary.

Patricia H. Hasbach writes about "Ecotherapy" (115-139). She distinguishes between ecopsychology as theory and ecotherapy as practice. She also separates merely nature-connecting and ecotherapy. For ecotherapy, there must be a triadic relationship with a therapist, a client, and nature.

Ecopsychology needs to take much more account of our evolutionary history. Hasbach endorses the tenets of traditional ecopsychology and reviews some of the epidemiological and outcome research on nature therapy. The bulk of her chapter provides an an excellent summary of many of the methods of ecotherapy and ties therapy into theoretical work and research in ecopsychology.

With "The Topophilia Hypothesis: Ecopsychology meets Evolutionary Psychology" (23-53), Scott Donald Sampson provides the link with evolutionary psychology advocated by Hasbach. He provides an interesting adaptationist argument for why people might have an affection for the landscapes we experienced as young children. Knowledge of our surroundings would have aided survival and bonding with our environment provides a way to motivate the acquisition of that knowledge. Sampson provides interesting evidence for topophilia from a number of sources. If we are going to care for the environment, we need to feel affection for it. This has been a theme in ecopsychology from the beginning. He points out that indigenous peoples have stories about their environment and that we need new stories. Near the end of his chapter, Sampson takes a surprise turn away from evolutionary psychology and topophilia and advocates for a science-based grand evolutionary narrative that might unite humanity in defense of the Earth.

Strong endorsement for changing our grand narrative is provided by Bruce Scofield and Lynn Margulis in "Psychological Discontent: Self and Science on Our Symbiotic Planet" (219-240). They open with a diatribe against religion, making it clear that science, specifically biological evolution, provides a superior world view. Science, however, has failed to provide the sense of community provided by religion. Systems thinking, in which we see ourselves as part of the natural world, rather than reductionist science, is needed to unite people in defense of the planet. Gaia Science is not necessarily the belief that Earth is an organism, but the less extreme assertion that it is a self-regulating biotic system. Seeing ourselves as participants in Gaia might provide the sense of community and belonging missing from natural science.

Laura Sewall provides an explanation of how processes of attention can affect our brain and hence our world view and behaviour. "Beauty and the Brain" (265-284) provides an explanation from neuroscience for the attentional shift involved in Sampson's topophilia and Scofield's and Margulis's systems thinking. When we pay attention to nature, we realize that we are radically interconnected with other beings. Sewall advocates for a revival of natural history as a way to redirect attention to the natural environment, both its beauty and its degradation.

Lisa Nathan provides an amusing qualitative research study which clearly illustrates the challenges we face in redirecting our attention. She spent time in several ecovillages; intentional communites where the residents are attempting to live sustainably and employ appropriate technology. In "Ecovillages: Information Tools and Deeply Sustainable Living" (173-194) she documents how they mostly succeed in adopting appropriate technology for shelter, transportation, and food production. Their relationship to information technology, however, presents a different picture. In spite of their understanding of the environmental hazards created by the production and disposal of information tools, the energy consumption of the networks that maintain these systems, and the role of these tools in limiting face-to-face communication, the residents of these ecovillages made extensive use of computers, email, and mobile phones. Nathan presents the sobering conclusion that "the resilience of digital information tools is a dangerous phenomenon" (191).

Hasbach, Margulis, Sampson, Scofield, and Sewell all suggest that we need to integrate our evolutionary history into ecopsychology. Yannick Joye cautions us that this needs to be done with care. Biophilic architecture is perhaps based on questionable evolutionary arguments. In "Can Architecture Become Second Nature? An Emotion-Based Approach to Nature-Oriented Architecture" (195-217) he tells us that perhaps our evolutionary history does not really matter. Our attraction to nature may have arisen because it inspires positive emotions such as awe. It is possible for architecture to arouse these positive emotions through structural landscape features, natural contents, animal life,

vegetative elements, water features, or fractal geometry, so some of the benefits of connecting with nature can be incorporated into the design of the built environment.

Glenn Albrecht tells a personal story about how his connection to his home landscape was broken by moving away. When he returned after many years, he found the connection had also been broken through the destruction, by both mining and urbanization, of the natural landscape he knew as a child. The unique endemic aspects of many places, and not just his home, are being destroyed so that everyplace is becoming like everyplace else. In line with Fisher, he sees this as a result of an exploitative social and economic system. In "Psychoterratic Conditions in a Scientific and Technological World" (241-264), Albrecht coins several difficult-to-remember/pronounce words to describe the processes of connection to the landscape and subsequent feelings of loss: psychoterratic, endemophilia, necrophilia, biophilia, ecophobia, ecophilia, solastalgia, topophilia. ecoanxiety, ecoparalysis, soliphilia, and eutierria. The easiest one to remember and understand is, perhaps, "global dread." Albrecht provides an interesting and useful typology for our diverse emotional reactions to our natural surroundings, recognizing the diversity and complexity of these reactions.

"We accept it as normal that people who have never been on the land and have no history or connection to the country may legally secure the right to come in and by the nature of their enterprises leave in their wake a cultural and physical landscape that is utterly transformed and desecrated" (286). This clear statement of the radical ethical message that perhaps underlies ecopsychology is from anthropologist Wade Davis in his chapter, "Sacred Geography" (285-308). In contrast to the indigenous peoples he has studied, contemporary mainstream culture has little sense of the inherent value of the land. Aboriginal peoples respect places, not buildings. Among examples from North America, South America, and Australia, Davis singles out the Mamos, or Elder Brothers, of the Sierra Nevada de Santa Marta in Colombia. Without falling into romanticising, Davis suggests that indigenous cultures might teach us different ways to relate to nature.

In the "Afterword," (309-321) Kahn and Hasbach introduce an important concept, Environmental Generational Amnesia, a term that describes the shifting baseline of environmental destruction. Each of us sees the world of our own childhood as "natural" and fails to recognize the incremental destruction of nature. This concept perhaps deserved a chapter of its own. They end the book with the hope that in the rush of technological change we might "give nature a chance."

In my opinion the project of revisioning ecopsychology as a scientific discipline was a failure. Except for the introduction and the chapter by Kahn, Ruckert, and Hasbach, the entire book is in the best tradition of a diverse ecopsychology with papers built on personal narrative, philosophy, and social criticism. Fisher articulates a vision for ecopsychology as a post-modern, critical discipline that provides a radically different view of a universe that is alive and conscious, and many of the papers in this collection support different aspects of his view, questioning the foundations of our nature-destroying political and economic systems, advocating ecological and systems-based science, and highlighting our addiction to technology.

This collection of papers shows some of the directions in which ecological thinking can take us. The book will be of value to educators who want to take their students outside, green their school grounds, bring plants and animals into the classroom, or teach their students ecology and natural history. These articles provide convincing evidence of the benefits, both to individuals and to the planet, of connecting with the natural world and of thinking holistically. Even more, they highlight the limitations of continuing on the present course of exploitative economics supported by reductionist natural science.

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