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Towards an Ecosociology

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Abstract
This article offers insights from ecopsychology – which aims to place human behaviour back in the context of the natural world – to further the development of an ecosociology that meets Catton and Dunlap's (1978) call for a paradigmatic shift in the way sociology views the role of nature in human society. A more ecocentric viewpoint, reincorporating direct experience, including the environment as part of being embodied, and extending the social to the more-than-human world, could offer new views on the nature of the social, what it is to be human, and wider issues of environmental sustainability. This would be a move towards a revitalized ecosociology that could help humanity come to terms with its unique, but not pre-eminent role in the global system.

Keywords
ecocentrism, embodiment, environmental sociology, human exemptionalism, sustainability, systems theory

Introduction

Once the purview of environmental science, concern about the ecological sustainability of human societies is continuing to spread across the various disciplines, including the social sciences. Initially considered to be outwith the domain of sociology, attempts to incorporate the role of nature within human society have grown substantially following the establishment of an environmental section in the *American Sociological Association* and Catton and Dunlap's (1978; Dunlap and Catton, 1979) call for a paradigmatic shift. The latter's notion of an 'environmental sociology' included both environmental and social variables as cause and/or effect; for example, the impact of social class on environmental degradation. This was contrasted with more traditional sociology studies which at the time still focused on social variables, albeit within a new environmental

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arena; for example, social class distinctions in public opinion toward environmental issues. They argued that traditional sociology perspectives were firmly entrenched in the dominant western worldview, sharing what they called a Human Exemptionalism Paradigm (HEP): a fundamental separation between humans and the rest of the animal world, culture being a uniquely human quality that is more variable and able to change more rapidly than purely biological traits; that humans have freedom of choice, subject only to social and cultural factors; that sociologists should focus on a social and cultural environment that is discrete from biophysical considerations; and that human ingenuity and problem-solving shows a cumulative progression that can continue to expand *ad infinitum*. Their suggestion of a New Ecological Paradigm (NEP) removed some of the imposed barriers separating humans from the world they live in: humans, while still exceptional, remain just one of many species that co-evolved in the same global ecosystem; human affairs are also influenced by feedback loops within the 'web of nature'; humans live within a finite biophysical environment that constrains choices and activities; where humans appear to overrule 'ecological laws' linked to an ecosystem's carrying capacity (the maximum number of individuals that an area can support), this situation is temporary at best.

Almost 20 years later, Vaillancourt (1995: 27) described the rapid growth of research, conferences and scholarly books that the new paradigm had encouraged. He advocated the term *ecosociology* to describe this latest incarnation of environmental sociology, describing it as 'eminently international, centred mostly, but not exclusively, on the large global issues presently affecting the future of us all' and 'multidimensional, focusing on the impacts of humans on the environment, and on the impact of the environment on humans'. He expressly highlighted the benefits of the ecosociologist's critical realism approach that 'permits us to avoid the opposed, twin dangers of naïve materialism and idealistic constructivism that are still so common in sociology'.

Despite this optimistic view of continuing shifts in perspective and an interdisciplinary (or even transdisciplinary) future, nine years later Bowden (2004) comments that, while environmental sociology has become widely recognized and institutionalized as a sub-discipline with a substantive increase in theoretical diversity, this has primarily been a process of 'greening' pre-existing theories, with developments under the NEP still closely approximating the theoretical traditions of the discipline as a whole, albeit with an eco-prefix added on (e.g. eco-Marxism). He suggests the major change is that the traditional economic orientation has been replaced with a more ecological 'orientation of scarcity', improving the green credentials of the various theoretical perspectives but not radically revising any of them. Statements defining sociology as being concerned with 'whether or not an issue is indeed a social problem, rather than … a natural phenomenon' (White, 2004: 2) are common, emphasizing human exemption from nature. However, Bowden makes the interesting point that self-identified environmental sociologists do perceive themselves to be 'working within a paradigm that differs from that of traditional sociology' (2004: 8). It may be that Walker (2005: 78) is right when he states 'the environment is not simply a neglected theme in sociology, but actually is a difficult one for sociology to embrace'.

Insights from Ecopsychology

A parallel story can be seen in psychology. In 1995, Stokols asked 'How can the paradox of environmental psychology's rapid growth and institutionalization, accompanied by an apparent diffusion of identity, be explained?' (p. 822). Using the same strategy as Bowden (2004), he answers by reviewing how the constructs and tools developed within the field were used to make other areas of psychology 'more environmental' rather than driving a paradigmatic shift. Like its sociological counterpart, environmental psychology, though focused on the human causes and effects of issues such as rapid climate change, maintained the traditional focus of the autonomous human against the backdrop of the environment.

However, here the story diverges. After the 1992 UN Earth Summit, and following on from earlier work on green psychology and deep ecology (Devall and Sessions, 1985; Greenway, 1995), the term *ecopsychology* was used by Roszak (1992: 22) to describe a new approach that might 'bridge our culture's long-standing, historical gulf between the psychological and ecological' and place human behaviour back within the context of the natural world. While today there is still an overlap with environmental psychology, ecopsychology has developed a discrete identity, combining social and cultural criticism from more radical voices within both ecology and the social sciences in a paradigmatic shift and reinterpretation of mainstream psychology (Fisher, 2002). This has not gone unnoticed by environmental psychologists, suggesting that, if they do not consider and address the spectrum of issues raised by ecopsychologists, they will 'have truly lost their way as well as their credibility' Reser (1995: 252).

Currently, there is still debate as to how best define ecopsychology, with various theorists following Roszak's initial aim to explore our emotional bond with the planet, and others advocating a more generalized approach that 'expands the field of significant relationships to include other-than-human beings … that views all psychological and spiritual matters in the light of our participation within the larger natural order' (Fisher, 2002: 7). Some suggest moving away from the constraints of psychology altogether in an attempt to find 'an accurate articulation of the human-nature relationship … based on experience … couched in language, and perhaps deepened by ritual and art' (Greenway, 2009: 50). Whatever the definition, the debate itself demonstrates that the field is both vital and enduring.

So what makes ecopsychology different from environmental psychology? Ironically, it might be the lack of specific focus on 'the environment', this phrase often bringing to mind an image of 'a structural, physical "stage-set" upon which background biological processes are acted out' (Putman et al., 1984: 15). Instead, ecopsychology is inspired by principles from the field of ecology, where the environment encompasses not just the diverse range of flora and fauna but also interactive abiotic components – a fundamentally systems-based perspective. Humans are just one part of a complex network of interrelated parts, of systems nested within other systems. As such, humans, while they have their own unique place within the ecosystem and may well have unique attributes as individuals and as a species, *cannot* be 'distinguished from animals by consciousness, by religion or anything else you like' (Marx and Engels, 1970: 42). We too are animals who, while adapted to a wide range of environments and possessing an intelligence that

enables us to adapt beyond our inherent biological limitations,[1] do not have an ecologically irreplaceable role in the global system.

Where Ecosociology Lost its Way

Ecosociology, on the other hand, still seems indistinguishable from environmental sociology. As with the latter's psychological counterpart, the environment has been problematized (Schnaiberg, 1980), merely focusing on physical or biotic factors that might directly affect society. It has not developed a discrete identity, nor can it yet be viewed as a radical reinterpretation of sociology in general. Even Vaillancourt's (2010) use of the term now merely serves to distinguish Buttel's notion of an environmental sociology that critiques social and global-political construction of environmental problems from Dunlap's realism approach.

I think this is due to a lack of meaningful engagement with the systemic perspective. While the *language* of systems theory is commonly used in many disciplines, sociology included (Buckley, 1968; Luhman, 1986; Vanderstraeten, 2003), a distinction can be drawn between making use of individual concepts from systems theory and fully adopting its precepts as a philosophical approach – what Sterling (2005) calls the difference between 'systems as discipline' and 'systems as worldview'. This can be seen where Dunlap (2010) describes sociology's renewed interest in the complex processes by which societies interact with the biophysical environment, arguing that environmental sociology needs to 'embrace more sophisticated conceptualizations of the biophysical environment'. He offers two examples of such conceptualizations: the widely used notion of ecosystem services – 'the benefits people obtain from ecosystems' (Millennium Ecosystem Assessment, 2003: 27), similar to Schnaiberg's (1980) influential notion of the environment as a base for human sustenance – and more general research into coupled human and natural systems. The latter example is closer to a systems worldview but both still show a form of exemptionalism: humans interact with (benefit *from*, are coupled *to*) a separated nature. The emphasis is clearly on societies' *dependence on* ecosystems rather then the original NEP emphasis of human *inter*dependence *within* those systems. Contrast this with the ecopsychology approach, which above all aims to break down the 'terrible illusion' of a human–nature divide (Greenway, 2009: 49), blurring the *perceived* boundaries separating humans from the environment they are in (Stevens, 2009) and replacing the dominant ethos of disconnection, abstraction and control with one of interconnection, emergence and participation – what Zweers (2000) terms a 'postmodern ecological worldview'.

While the NEP, and ecosociology in general, was perhaps held back by concerns that it implied environmental determinism or biological reductionism, Jermier (2008) suggests there was also a lack of clarity as to how Catton and Dunlap's paradigmatic shift might actually occur. He acknowledges Dunlap's assertion that the accumulation of evidence casting doubt on the ecological survival of modern societies led to 'a decline in adherence to the increasingly obvious exemptionalist orientation of mainstream social science', but notes that Dunlap merely states that this would be followed by a 'gradual emergence' of a new ecocentric paradigm (2008: 465).

Yet a paradigmatic shift has emerged in ecopsychology despite concerns within mainstream psychology. So what key approaches exist within ecopsychology which might offer a way forward for ecosociology? I suggest that by considering the seeds of ecopsychology – linked ideas from systems theory, ecofeminism, and deep ecology – a way forward for ecosociologists might also emerge.

From Systems Theory: Emergence and Transcendence

A defining characteristic of any systems perspective is that interactions occur both within and between systems, including those entities which are perceived as being on different levels of a hierarchical structure. While each level of a system has properties which are operational only at that level (i.e. emergent), there are also processes which transcend the different levels. For example, coral reefs represent communities made up of populations of aquatic organisms in symbiotic relationship with populations of algae. The resultant ecosystem has the emergent property of being so efficient at recycling and retaining nutrients that it can thrive in low-nutrient waters (Barrett et al., 1997: 534). Yet at all levels, the system depends on energy provided primarily by the Sun, whether this is direct (e.g. photosynthetic cells) or indirect (e.g. oceanic nutrients distributed via solar-heated warm currents). This solar energy requirement is thus a transcending property of the entire system.

Generally speaking, psychologists appear more comfortable with the notions of emergent and transcendent properties than sociologists. They have an implicit (if somewhat uneasy) awareness that an irreducible mind emerges from biology, while also acknowledging transcendent properties like the need and desire for food, or the physical commonality of the range of stimuli human sensory systems can detect. Ecopsychologists go further, engaging with sociobiological notions like biophilia – an innate, emotional response to systems which have the appearance of being alive, expressed through a continuum ranging from individual experience to cultural expression (Wilson, 1984). Roszak (1992: 14) explicitly identifies a transcendent theme of 'the needs of the planet and the person as a continuum', offering a view that the properties which allow individuals to be physically and mentally healthy – awareness of being part of and reliant on the web of life, being surrounded by natural patterns and rhythms in everyday life, and having reciprocal relationships with other beings, human or otherwise – are the same ones which are associated with a healthy ecosystem on local and global scales.

For both (eco)psychology and (eco)sociology, the environment itself can be seen as a transcending property. Like every other organism on Earth, humans evolved as part of a natural environment so we would expect that, as with all other animals, much of our behaviour patterns and ways of thinking still reflect our adaptation to that type of environment. This ties into the notion of embodiment – that our thoughts and experiences are intimately related to 'the kinds of bodies we have, the kinds of environments we inhabit' (Johnson, 1987) – meaning that our bodies remember their shared evolutionary history, and are still connecting to the origins of the species of animal we call human. As individuals, we feel less depressed and more positive when we breathe the chemical exhalations of trees in old-growth forests that have complex, established ecosystems

(Maloof, 2005). The self-similar fractal[2] complexity of our bodies responds favourably when we perceive similar patterns in the world around us, whether these are the patterns of leaves and flowers or the sounds of moving water and flowing wind (Purcell et al., 2001). As a society, we find less crime in areas where trees and vegetation are abundant (Kuo and Sullivan, 2001), and our bodies' preference for fractal geometry also shows up cross-culturally in the artwork (Short, 1991) and architecture (Joye, 2007) that we use to create our own aesthetically pleasing environments. A systemic perspective lets us see that it is neither mysticism nor wishful thinking to say we (as embodied beings) are an interlinked part of something larger (a society, ecosystem or global population) but simply a statement of how we came to be who and what we are on whatever level we choose to study.

From (Eco)Feminism: Direct Experience

As an integral part of a system, our experiences inform us about the state of that system. Such thinking is implicit in the feminist movement, where direct experience is an enduring theme: 'The personal is political' was the title given to Carol Hanisch's 1969 essay where she describes how her involvement in women's therapy/personal groups gave her 'a gut understanding of everything as opposed to the esoteric, intellectual understandings and noblesse oblige feelings I had in "other people's" struggles' (Hanisch, 2006). Similarly, ecofeminism emphasizes that a realization of interconnectedness with the natural world only comes from direct, lived, and sensual experience (Diamond and Orenstein, 1990); the personal is also ecological. More generally, Blackman et al. (2008) describe how direct experience played a vital role in the creation not only of feminist politics but also anti-racist movements, various formations of cultural politics and many post 1960s urban movements. As Heckert (2010: 192) puts it: 'listening to one's own body, to sensations and desires, to pleasure and pain' can itself be 'a counter-practise to a culture in which many of us have learned to doubt ourselves'.

Yet direct experience has become devalued in sociological thinking. Wagner-Pacifici (2010: 112) talks of the 'paucity of direct contact scholarship among cultural sociologists', asking whether their 'practised indifference to … objects powerful enough to move people to tears, awe, or anger' could indicate 'some unconscious fear of contamination or enthralment if the sociologist comes too close to the work's aura?'. Smith (1990: 27) points to women's direct experience as a critique of sociology, stating that it shows the 'uneasiness that comes from sociology's claim to be about the world we live in, and, at the same time, its failure to account for or even describe the actual features we experience'.

Compare this to ecopsychology, where direct experience is emphasized, both to exemplify ecopsychological principles and in the use of self-reflection as a guiding practice. A common experience of teaching or communicating ecopsychological ideas is that it is very easy to both engage an audience and explain complex principles using experiential exercises (e.g. innate somatic relaxation from viewing nature images – Hartig and Staats, 2006). Audiences typically report feelings of familiarity with the concepts, describing them as self-evident or self-explanatory, and giving illustrative examples from personal experience.

I think an ecosociology would also benefit from a reincorporation of direct experience. Not as a path to biological determinism and essentialism, nor an empiricist's approach that says direct experience is unaffected by social conditions, but as a shared ground from which to observe society's emergence. Beasley and Bacchi (2007) sum it up well when they say what is needed is 'a better way of gripping together the corporeal and the sociopolitical – of grasping simultaneously the sociality of flesh and the physicality of social life'; a shared, embodied reliance that is both radical and profoundly levelling. Similarly, Smith's (1990: 27) call for an 'alternative' sociology that begins from direct experience and which would 'return to it as a constraint or "test" of the adequacy of a systematic knowledge' would also form part of a meaningful ecosociology; one which would be 'a means to anyone of understanding how the world comes about for her and how it is organized so that it happens to her as it does in her experience'.

Inspiration might be found in current works on the sociology of the body, especially work which focuses on the coupling of the human body with the physical world (e.g. the special issue of *Body & Society* on 'Bodies of Nature').[3] Yet even in this area, direct experience is described as a subjectivity that is always unfinished 'because it exists only in the present' (Blackman et al., 2008: 16) – a denial of the evolutionary history that is enfolded into every level of our being. An ecosociology needs to recognize our embodied nature at any given moment as an evolutionary plateau (Deleuze and Guattari, 2004: 24) – an opportunity to recognize one's human self as well as the points of connection between one's identity and actions and those of other human *and non-human* participants engaged in the similar 'struggles' encountered in everyday life (paraphrasing Chesters and Welsh, 2005: 194).

From Deep Ecology: Extending the Social

The idea of spatial and temporal points of connection is also found in deep ecology (and thus in ecopsychology). Unlike the standard view of humans as discrete, self-contained entities – social actors against the backdrop of the environment – 'individuals' no longer have qualities that are independent of where they are located. Instead 'the intrinsic relation between two things *A* and *B* is such that the relation belongs to the definitions or basic constituents of *A* and *B*' (Naess, 1995: 3), whether those two things are human, non-human or abiotic. This intrinsic relationship is pragmatically expressed via the concept of *biospherical egalitarianism*, the 'equal right to live and blossom' (1995: 4) for all beings, not just those categorized as human – leading ecopsychologists to extend the social to the 'more-than-human' (Abram, 1997), including relationships with abiotic entities (e.g. childhood toys, cherished possessions, favourite places).

Such an extension would need to be part of any ecosociology, and there are existing attempts that go some way towards this. Actor-Network Theory (ANT) at first sight appears compatible with deep ecology principles, stating that 'entities take their form and acquire their attributes as a result of their relations with other entities' (Law, 2004) and having been developed to 'analyse situations in which it is difficult to separate humans and non-humans, and in which the actors have variable forms and competencies' (Callon, 2004: 183). Or, more simply, 'the stuff of the social isn't simply human' (Law, 2003).

Yet ANT is perhaps *too* abstract, requiring us to 'put aside all our usual assumptions about the distinctions between things and people' (Murdoch, 2001: 122), and has been criticized by many sociologists who feel that a clear society–nature boundary is a prerequisite for the investigation of the social dimensions of environmental change (2001: 123). Ecopsychologists acknowledge that people can be distinguished from things – can still have inherent attributes unique to the individual, species or culture – but suggest that issues such as environmental change arise as a *consequence* of any society imagining itself as separate from nature, rather than emerging from it; the fundament from which the social grows.

This desire for a society–nature boundary also demonstrates a continuing entrenchment in sociology of not just human exemptionalism, but a more fundamental anthropocentrism: 'human' is intrinsic in definitions of 'social'. Dissolving the perceived boundary between social and natural domains is seen as a devaluing of what it is to be human, a reduction of human experience and values rather than an extension. Humans are special, with unique properties: they 'appear to hold capacities that other organisms do not hold … linked to language and culture and the ability to reflect upon circumstances' (Murdoch, 2001: 127). Zavestoski (1997: 6) thought environmental sociology would succeed only when it could 'account for the unique position of humans as both a part of the web of life as well as social, self-reflective, and moral beings'. While an argument can be made for humans (or any other species) being unique, we are not necessarily an irreplaceable component in any ecological system. Likewise, the story that humans have the unique qualities of being social, self-reflective, and moral beings is common but seems based more on a desire for it to be so than any compelling argument. Non-human animals demonstrate many of the traits once reserved exclusively for humans, such as making and using context-specific tools (e.g. Weir et al., 2002) and showing empathic response (e.g. Fraser and Bugnyar, 2010). Zoologists generally recognize that several non-human species – primates, elephants, some avian species, and cetaceans at least – show complex communication and have social structures and politics (Balcombe, 2010; Herzing, 2010). Dolphins especially have been shown to have 'the ability to comprehend sequences of gestural and acoustic codes or "artificial languages"' (Reiss et al., 1997: 143), with individuals developing an idiosyncratic whistle 'signature' which appears to serve the same functions as a name does amongst humans. Extending the social to include non-humans need not be seen as threatening but instead can be a widening of our understanding of what it means to be human, valuing 'humanity' wherever we find it. As Naess (2008: 311) puts it, 'What we look for is not a shift of care from humans toward nonhumans, but an extension and a deepening of care'.

Benefits of an Ecosociology

So if Walker (2005: 78) was right and incorporating the environment is difficult for sociology to embrace, is it worth the effort? There are certainly many social theorists who feel that sociology would benefit from a 'retheorization of the nature/society divide' (Goldman and Shurman, 2000). Freudenberg et al. (1995) consider that social constructions and physical facts are inextricably intertwined, having 'interpenetrating influences [that] are often so extensive that the relevant factors can be considered

"socioenvironmental"'. Worthy (2008) asks that 'the task of re-establishing our phenomenal connections with the rest of nature should be pursued without delay' while Lockie (2004: 26) states that any social theory that 'cannot find a place for the non-human organisms, substances and patterns of nature is social theory that is inadequate for understanding key dimensions of our contemporary world'. Murphy (1995: 693) puts it more strongly, saying that 'sociology as if nature did not matter is … a sociological theory of Disneyworld, a synthetic world inhabited by artificial creatures, including humans, constructed by humans'.

These concerns are borne out by ecopsychology: Doherty (2009: 2) suggests the 'eco' approach was vital in bringing together previously disparate fields to provide 'an important counter-weight to the human-centric, reductionist, and primarily intellectual modes of academic psychology and mainstream clinical practice'. For example, he cites (2009: 4) Louv's (2006) ecopsychological work that 'in the space of 3 years, engendered an international grassroots movement and successful legislation'. An ecosociology would likewise invite some new ways of thinking, both within and without sociology.

From Embodiment to Embedment

I suggest a way forward for ecosociology would be to reconsider a well-established concept within sociology: embodiment. This most commonly refers to the human experience of being an embodied being, yet sociologists have historically been reticent in embracing the biological nature of that body. This may be because acknowledging a role for biology at societal level would reveal the socially constructed nature of the human–nature dualism, maintenance of that division being necessary to 'support the claim that humans [are] morally superior to nonhumans, thus providing a justification for the domination of nature' (Purser et al., 1995: 1057). However, if we are to take an ecological perspective of human society, there needs to be an awareness of the biology inherent in the embodied experience – an awareness that we directly experience in everyday life, in the discovery of pleasure and the intensity of pain; in the frustrations of speed and access when moving around our environment; in the all-too-often dichotomous manner of thinking that bilateral, bipedal, binocular species seem prone to. Our intentions are expressed to others through our actions, postures and expressions, but we must also recognize that those biophysical states themselves feedback to alter our interior, mental states: smiling increases and frowning decreases positive emotional states through physiological changes in associated brain regions (Zajonc et al., 1989), while hunched postures induce feelings of helplessness and stress (Riskind and Gotay, 1982). Likewise, societies are shaped and constrained by embodiment – the way we can interact and communicate, the nature of the threats used to maintain power structures, the incorporation of evolution-derived signals and triggers to dominate or persuade – but they too feedback to shape those bodies through norms, fashions, punishments and directly body-affecting by-products (e.g. health-degrading environmental pollutants, contraceptive and hormone-like substances distributed via sewer systems).

Gorringe et al. (2007) recognize that the concept of embodiment is of fundamental importance to sociological enquiry, arguing that it not only is a bearer of evidence of labour, social and gender division, and a medium of communication (of history, emotion

and intention), but also has a transformative capacity. They highlight (2007: 2) the dominant view that the body is 'seen either as passively incorporating the social or as an active agent of social construction with little relation to the macro-social environment' and suggest that 'various social agents use their bodies … both to resist and potentially transform power structures by subverting the physical and symbolic bodily order that such structures create and require in order to exist'.

An ecosociological perspective could go even further. Embodiment, while important, is only a starting point as it can serve to reify the notion of a society of individuals: separated bodies passing through an external environment. But bodies are not discrete entities: they are an integral part of the place they are in. Our environment shapes us, both through evolutionary processes and in the way we react to the place we are in; it connects us through the myriad physical connections that we call our senses; it guides and constrains us. Abram (1997) put it well when he wrote:

> We can experience things – can touch, hear and taste things – only because, as bodies, we are ourselves included in the sensible field, and have our own textures, sounds and tastes. We can perceive things at all only because we are entirely a part of the sensible world.

As embodied beings, we can only fully understand who we are by having an awareness of our physical nature; as embedded beings, self-understanding can only come if we are equally aware of our physical environment (Stevens, 2009). By extension, we need a concept of *embedment* (Stevens, 2010): that our inclusion in the environment is an essential part or characteristic of our selves, meaning that *who* we are is intimately connected to *where* we are, as individuals and as societies.

Sociology as a whole has tended to neglect any primary role for place in much the same way that the biological body has been seen as secondary – Freudenberg et al. (1995: 364) state that 'even the work of environmental sociologists often takes as its starting point the analytical separation of the biophysical from the social'. Yet many of the same issues regarding embodiment apply to the places people inhabit. Place can reflect working conditions and social class. Place (through aspects of interior design, gardens, or recreational sites) can reflect gender divisions as well as being used as symbolic representations (women as wild nature; masculinity expressed through braving wilderness). Place is part of who we are, both as individuals and as societies; an agency[4] that shapes us as we shape it. To extend Malafouris' (2008: 22) phrasing, an ecosociology would consider the grey zone where brain, body, culture and place conflate.

Addressing Issues of Environmental Sustainability

Although long ignored (Passerini, 1998), sociologists are becoming increasingly concerned with sustainability and sustainable development, defined in a 1987 United Nations report as meeting 'the needs of the present without compromising the ability of future generations to meet their own needs'. The budding ecosociologist might note that this says nothing explicit about ensuring future *ecological* sustainability. As Rees (1990: 1) points out, use of the term sustainability 'is no longer a challenge to the conventional economic paradigm but rather has become another excuse for continued economic

growth. True sustainability demands a radically different economics which fully recognizes the processes and limits of the biosphere.' Sustainability in the commonly used definition is primarily anthropocentric – the 'needs of the present' refers to human needs, 'future generations' means human descendants – and, as I discussed earlier, sociology helps maintain this anthropocentrism. The NEP was aimed at putting humans back into nature by recognizing our ecological interdependence, yet it still maintained the unique innovative capacity of humans over other species that characterized the HEP. More recently, Tabara and Pahl-Wostl (2007: 3) asked sociologists to learn 'not to separate human societies from nature, but to live in harmony with nature, rather than dominate it' and 'to empathize with and extend our compassion to people of other lands, other species, and future generations to preserve the integrity of the ecosphere and the survival of all'. Ecosociology should heed these calls, and aim to address the anthropocentrism that is implicit in the way many sociologists write about the environment.

A more encompassing definition of sustainability would be in terms of an ecosystem being able to maintain its processes, functions, and biological diversity in the long term, with human interactions being seen as an *integral part of* that ecosystem. This is arguably no less human-centred than the UN definition but more realistic, for the dynamic, self-organizing networks that we call ecosystems are the same systems that humans evolved within and which must remain healthy if humans are to remain healthy (Norton, 1992). By taking a more ecocentric view and embracing an ecosociology that uses the language and metaphors of dynamic, open, interrelated systems, integrating biological embodiment and environmental embedment, and extending the social to include the non-human, then true sustainability might arise almost as a side-effect – an emergent property of a viably functioning ecosystem of which humans are (hopefully) still a part.

Ecosociologists might also consider the characterization of environmental issues as problems that need solutions. Whatever the issue, it is a problem because it affects humans, whether those humans are nature-lovers, conservationists, or exploiters of 'natural capital'. Essentially, this is another anthropocentric view. There is a focus on 'charismatic megafauna' (i.e. big animals that humans find attractive, such as polar bears or whales). Other equally endangered but less media-friendly species (e.g. wasps) are neglected, even though it is these species whose absence would affect human society most profoundly (i.e. as agricultural pollinators). Non-humans are characterized as 'natural resources' with scant regard for other species' needs, let alone future human needs, thus avoiding any implication of personhood (as when the work-force became 'human resources'). Patterns of human social structure also tend to be imposed onto the environment: ecosystems need to be 'managed', the implication being that humans, as the dominant, superior species, have not only the power but also the knowledge and moral right to do so.

Problem-solving itself is fundamentally dichotomous, encouraging a separation between the problem-solver and the situation. Vaillancourt (1995) describes how this approach led to environmental sociology reinterpreting environmental issues as problems of public health and security, neatly replacing the Cold War nuclear threat in the public mind, but an ineffective strategy for actually mitigating the problems. Buckley (1968) conceptualized societies as complex adaptive systems, with feedback loops dynamically structuring those societies in response to external changes in

the environment. His formulation did use a more ecological, systemic approach but maintained the idea of an external, problematic environment that was only unidirectionally causal (environments shape societies). He also described the environment as 'chaotic and unpredictable' and 'a continuous threat' – language which parallels the current narratives of war and security used to describe rapid climate change (e.g. *War on Terra*, Wikipedia, 2009), or the need to 'confront' climate change (United Nations, 2010: 1). As a small part of the global system, humans may well feel 'threatened' by big environmental changes but this is not part of a systemic perspective. The threat metaphor is, however, completely consistent with (and reinforces) the traditional human versus nature dichotomy.

If we instead think in ecosociological terms then, while issues of rapid climate change and ecological degradation are indeed problematic in terms of habitat loss and extinction risk for various species (including humans), in the long term this is just another adaptation of the greater planetary system, albeit one occurring at an unprecedented rate and linked to human activity. One ramification of a systems view is that there are always feedback loops allowing all aspects of the system to affect each other. Buckley (1968) envisioned a society as an open system – one with a multidirectional, permeable boundary – but somehow avoided realizing the implication that society must also affect its environment (as with the current situation of anthropogenic rapid climate change).

An ecosociological approach also has implications for how we understand the dynamics of societies. As Hardin (1968: 1245) said, 'morality is system-sensitive': the conditions under which it is moral to do something are impossible to legislate for or even describe, yet if a person identifies with an object or entity, they act to avoid harm to it. If the object of identification is a system, then behaviours and attitudes which act in the interests of that system tend to be self-motivated. Being an integral (but not primary) part of that system with every action having an effect on the whole encourages a sense of both responsibility and empowerment. That person feels valued both as an individual and for their role within the whole – what ecopsychologists call an 'ecological self' (Wilson, 1996). Such identification not only relates to self-motivated pro-environmental behaviours (Bragg, 1996) but also encourages people to seek out and maintain more positive social relationships in general (Markus and Kitayama, 1991). Sustainability can then be seen as an emergent property arising from a human-inclusive ecosystem that is itself sustainable; that is, 'at once healthy, viable, adaptive and self-organising' (Sterling, 2005: 38).

Conclusion

Despite a widespread call for paradigmatic change and increased interest in the sociology of the environment, Vaillancourt's (1995) ecosociology has yet to be fully realized. Meanwhile, ecopsychology has captured the imagination of many researchers and theorists as well as reaching out to practitioners, therapists and concerned environmentalists by offering a framework within which to understand the environmental crisis and our various responses to it. Yet ecopsychology lacks sociological understanding, focusing primarily on the individual's relationship to the natural world without being able to offer a much-needed understanding of the wider society–environment relationship. By using

insights gained from ecopsychology, a more ecocentric viewpoint coupled with a systemic perspective could lead to a truly 'eco' sociology. This would also have wider implications, moving to models of society based on a fully systemic perspective of complex, dynamic interactions, more at ease with transcendent and emergent properties across all levels from the biological to the global. By reincorporating direct experience and extending the social to the more-than-human world, embracing embodiment and recognizing embedment, a revitalized ecosociology could help humanity come to terms with its unique, but not pre-eminent role in the global system.

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Notes

1 It is debatable whether a concept of intelligence based on the ability to alter the environment to meet the needs of a single species is a good one. A more ecological worldview might also require us to conceptualize an 'ecological intelligence' that also lets us know when we need to change ourselves to meet the needs of the ecosystem.

2 Mandelbrot (1983) published a mathematical description of the complex shapes found in nature, showing that a wide range of natural forms (e.g. a fern leaf) exhibit repeating patterns when viewed at increasingly high magnifications – what he termed a fractal geometry.

3 *Body & Society* 6(3–4), November 2000.

4 I copy Freudenberg et al. (1995) here by stating that, in using the word 'agency', I do not mean to imply any volition or will to the biophysical environment. However, such volition is sometimes perceived as existing by people when they are directly affected by environmental changes. As Malafouris (2008: 22) puts it 'while agency and intentionality may not be properties of things, they are not properties of humans either: they are the properties of material engagement'. It could also be argued that Lovelock's Gaia Theory (Harding, 2006) incorporates a planetary system agency wherein large-scale homeostatic processes do 'choose' to bring about specific environmental changes.

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