

Contact with nature as a research variable in wilderness therapy

by

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Abstract

Today's technological and highly urbanized western society has significantly reduced our direct contact with wild nature. This disconnect is suggested to contribute to increasingly compromised human health and wellbeing. If contact with nature - a key component of wilderness therapy - is an antidote, what theoretical support exists to articulate its use in practice, and how can we empirically demonstrate its effectiveness? This paper encourages a program of research to determine the influences of direct contact with wild nature in wilderness therapy. If found to mediate or contribute to positive psychosocial outcomes, 'contact with nature' could gain acceptance as an evidence-based practice for use across multiple sectors and therapeutic modalities.

Key words: Nature, Wilderness therapy, Attention restoration theory, Evidence based research

Introduction

The role nature plays in wilderness therapy is poorly understood. Practitioners and academics alike are quick to provide personal expressions, anecdotal evidence and borrowed theories to lay claims to the therapeutic value of nature. Research designed to isolate nature's mediating or confounding impact on therapeutic outcomes will improve the articulation of wilderness therapy's theoretical underpinnings. Considering the link between nature and human development, Kellett (2002) stated:

The relative absence of published material on this subject may be indicative of a society so estranged from its natural origins it has failed to recognize our species' basic dependence on nature as a condition of growth and development' (p. 118).

While wilderness therapy begins to show promise as a treatment option, primarily with adolescent populations, clinical outcomes

reported in literature are primarily conceived as the result of clinical interventions that occur outdoors (Clark, Marmol & Cooley, 2004; Bettmann, 2007; Russell, 2003). Nature's inherent healing qualities have been implied in the literature of these and similar studies, but not often described as a directly contributing therapeutic factor (Beringer & Martin, 2003; Taylor, Segal, & Harper, 2010). Norton (2011) highlight the unique therapeutic environment that the wilderness provides, and her research also describes the positive impact that simply 'being in nature' can provide; however this is relatively unique in wilderness therapy literature.

Beringer and Martin (2003) challenged the dominant adventure therapy theorists as simply using the outdoors and nature in principally utilitarian terms' (p. 31), while placing emphasis in defining adventure therapy on the activities and the experience. As an extension of these authors' challenge, it is here argued that supportive research is needed beyond the acceptance and expression of nature's role in adventure and wilderness therapy. This need is not unique to adventure and wilderness therapy. Even eco-psychology as a field of study has asked the question: 'How does ecopsychology hope to persuade others to be interested in its theoretical propositions if it cannot provide data to support its foundations?' (Thompson, 2008, p.35). A parallel question is here asked of wilderness therapy.

This paper suggests undertaking research of direct contact with nature in efforts to support outdoor and wilderness-based therapy through the generation of research evidence. A brief exploration of wilderness therapy is provided, followed by musings on cultural history that provide one perspective on what may have brought modern western society to a place where contact with nature is described as 'novel', and implied in the literature to be inherently 'therapeutic'. Theoretical support for these ideas, along with a pro-

posed research approach to test these propositions is offered.

Wilderness as therapy

Wilderness therapy can be viewed as one approach under the umbrella term of adventure therapy. Adventure therapy theorists have articulated challenge and risk-related activities, experiential learning, and novel settings and experiences as core elements of practice, integrated with conventional therapeutic approaches (Gass, 1993). Further, wilderness therapy is described to include the realities and influences of outdoor living and travel as integral to therapeutic practice (Russell, 2001). Adventure therapy can arguably be practiced in an office setting, while wilderness therapy cannot (unless metaphorically travelling in the 'wilderness' of the mind). As adventure therapy can occur in wild nature, the term wilderness therapy will be treated as inclusive of adventure therapy herein.

The natural environment, in essence, that which separates wilderness therapy from adventure therapy in non-natural settings, may in fact be a therapeutic variable, or at least mediate, yet maybe confound, reported research outcomes (Harper, 2009). If we accept, even just for the sake of argument, that nature itself has an impact on the individual in therapy, we must then look more critically at why, and how, we can then take advantage of these understandings to better serve clients. A critical perspective must first be anchored in historical and practical context. To begin this exploration, I ask, 'how have we come to experience nature as a setting or condition which has an effect on us outside of our daily experience?' That is, how did we come to experience being in contact with nature as novel?

Modern failure of human development

At no time in human history have humans been more physically and psychologically removed from a healthy and intimate relationship with wild nature. Many western nations

now report rates of urbanization greater than 80%, and the United Nations stated in 2008 that more than half the world's population is now urbanized. Further, a now-commonly cited study in health research cites that North Americans spend, on average, 90% of their day indoors and an additional 5% in their cars (Klepeis et al., 2001), suggesting western lifestyle patterns of humans primarily living in 'built' versus natural environments.

Urbanization has become more prevalent since the shift toward agricultural societies when the nomadic lifestyle pattern was rapidly replaced by a more static life in ever-expanding settlements. Agriculture has been singled out as one of the most significant acts of our species in altering the relationship between humans and the rest of nature. Offered here is a simplistic explanation - lacking depth, and acknowledging that 'any attempt to seize upon a single historical variable to explain the western world's relentless humanizing of the wilderness is intrinsically narrow' and does not account for developing socio-cultural processes (Oelschlaeger, 1992, p. 284). The agricultural argument, covered in depth elsewhere (see Shepard, 1982) does however provide 'legs' for theoretical musings to stand on as to why contact with nature, and surely the wilderness therapy context, may provide a healing or therapeutic experience for the human condition.

With 300,000 years of hunter/gatherer ancestry (those who traveled and modified their lifestyles by the rhythm of migratory paths, climate, geography and tribal and inter-tribal influences) - to the planting of crops to sustain permanent settlements only 7,000-8,500 years ago, very little had changed in the human relationship with nature (Davis, 2009). During the acceleration of agricultural practices, and subsequent growth in populations, so the argument goes, a divide was forged between humans and nature (Shepard, 1982). The increasing need to control nature for food production resulted in new

constructs such as 'weeds' and 'wild'. This growth in production, the advent of the resource extraction industry, and early signs of large-scale environmental degradation, was well underway as humans entered the Golden and Iron ages. By the time of the Industrial Revolution, wilderness in many parts of the world were exploited and controlled as resources serving human needs. To re-quote Thoreau (1962):

'In wild[er]ness [resources] lies the preservation of the [western] world's consumptive lifestyle patterns.'

Today's technological and highly urbanized western society is severely disconnected from nature. The teaching of basic food production and local knowledge of flora and fauna, let alone excursions into wild nature, are often considered novel and unique experiences. Further, we are also now witnesses to the gravest conditions of global environmental health, from species and cultural extinction to climate change and deteriorating air quality and food security issues. While not hard to rationalize nor demonstrate, ill environmental health has been linked to ill physical health. Harder to legitimize is the relationship between ill environmental health and its negative effect on the human psyche, ill mental health. Eco-psychology theory depicts our psychological health as intricately related to environmental health (Roszak, Gomes, & Kanner, 1995). We may yet come to accept the links between current global environmental problems and increasing rates of mental illness as a society.

Shepard proposed in *Nature and Madness* (1982) that a dualistic relationship between humans and nature is resultant from our failing to become fully mature as a species. This immaturity, he aligns with being stuck in an adolescent stage of development, due in some part to rapid growth in civilization, continued separation from nature as a species and some deeper, illogical, failure of human

development, as he suggests - a madness. He points out that the notable social psychologist Fromm (1955) questioned the sanity of society almost 55 years ago, suggesting a significant cataract in the universal vision of our relationship to nature.

With an apparent cultural 'forgetting' of modern western society's earlier relationship with nature, and possible evolutionary preferences being denied, it is easy to conceive that we should be taking action to restore our relationship with wild nature from a psychological and health perspective. If our societal 'madness' has detached us from an equitable and beneficial balance with our environment, what is the antidote, and how does it work? If contact with nature - as simply proposed here - is the antidote, and a key in the wilderness therapy context, what theoretical support exists to articulate it?

Theoretical support: Contact with nature for therapy

Contact with nature has been demonstrated to contribute positively to human health and well-being (Maller, Townsend, Pryor, Brown, & St. Leger, 2005; Miles, 1987). Studies cited are often backed with conceptual support from attention restoration theory (ART), and contextualised in biological and evolutionary discourse (Gullone, 1997; Kaplan, 1995; Kaplan & Berman, 2010).

ART suggests that contact with nature contributes to restoring our ability to pay attention. The theory has been tested, and has continued to show support in research literature for more than two decades (Berman, Jonides, & Kaplan, 2008; Hartig, Mang & Evans, 1992; Kaplan, 1995; Kaplan & Berman, 2010; Kaplan & Kaplan, 1989; Laumann, Garling, & Stormark, 2001). Kaplan (1995) described directed attention as that which requires concerted voluntary effort and is 'susceptible to fatigue, controls distraction through the use of inhibition', whereas involuntary attention requires no effort and is therefore presumed

to not cause fatigue (p. 170). Involuntary attention occurs when in environments or viewing environments that are unique or fascinating but not requiring direct cognitive effort (think of a calculus lecture versus staring at a campfire), the outcome of increased directed attention is improved cognitive and emotional functioning. Further, the increases in directed attention from time spent in contact with nature have been theoretically linked to increases in executive functioning (decision-making ability) and self regulation (impulse control and resisting temptations) which are highly valuable resources to the clients and practitioners across education, development or therapeutic settings (Kaplan & Berman, 2010; Kuo & Faber-Taylor, 2004).

Comprising a number of constructs (see Table 1), ART has been explored across varied populations and settings, and has demonstrated improved directed attention along a spectrum from simply viewing nature, to being physically active in nature; important findings for urban planning, health promotion, education and therapeutic sectors alike (see Maller et al., 2002 for an overview of health benefits arising from contact with nature).

'Wild nature' provides a dynamic ever-changing environment in direct contrast to a static indoor 'built' environment. This reality suggests that therapists and clients of wilderness therapy are afforded greater opportunities for heightened sensory, motor and affective responses, thereby offering potentially greater opportunities for the therapeutic process in natural environments. ART provides a readily accessible framework to evaluate the effect of contact with wild nature. From a practice perspective, the constructs of the Perceived Restorativeness Scale (PRS) should inspire critical thinking on how the environmental setting may contribute to their client's outcomes.

Last, evolutionary and biological preferences have been identified and more recently sug-

Table 1. Constructs of the Perceived Restorativeness Scale (PRS)

Construct	Description
Being away	The setting is different or 'novel' relative to your everyday work/life setting; hence, you are 'away' from it
Fascination	Attention is held easily, not requiring concentrated effort, think of staring into a fire or babbling creek
Coherence	The setting 'makes sense' in that things are not confusing or illogical
Scope	The setting provides adequate opportunities for exploration and interpretation
Compatibility	The setting is in alignment with personal (and evolutionary) preferences, skills and knowledge
Familiarity	The setting is 'known' to you, or has traits you are familiar with
Preference	The setting is a 'preferred' place, you would rather be in that setting than others

Notes:

1. Kaplan's original theory had only four constructs: Being away, Fascination, Extent, Compatibility
2. Hartig and others have further developed the theoretical constructs for attention restoration theory, including separating: Coherence and Scope into distinct constructs from Extent, and adding Compatibility and Familiarity (Terry Hartig, personal correspondence, Summer 2009)

gested as linked to increased pathology in western society. This provides an interesting perspective on how being in nature may assist or detract from therapy, yet, how our biological realities are tested by rapid technological change and intensive urbanization of lifestyles demands a paper of its own, and cannot be adequately covered here (see Gullone, 2000 for her treatise on the link between reduced contact with nature and increased psychopathology).

Considerations for the wilderness therapy practitioner regarding evolutionary preferences include whether or not specific terrain or weather conditions may be ideal or detrimental to the therapeutic experience of a particular client. Asked here to provoke further research and theoretical explorations, I simply leave the suggestive example that dark caves, mountain ridges, a sunny day at the beach and open prairie wind storms all likely provide unique experiences to those traveling in them, and surely in relation to a combination of lived experiences as well as our collective evolutionary preferences (Verbeek & de Waal, 2002). It is acknowledged that

assessing client's compatibility to specific environments may be an idealized level of sophistication for future wilderness therapy research and practice.

Research in the field of wilderness therapy is evolving in the purview of an influential medical model - a reliance on outcomes research within the hierarchical evidence-based paradigm (Harper, 2010). Regardless of theoretical orientation and pedagogy of practice, the therapeutic value of contact with nature - simply outdoors or in wild nature - has been mostly ignored in empirical investigations of this field, leaving outcomes to be interpreted as being reached by clinical intervention alone (i.e. therapeutic approach, activities, group process, etc.). This is not to say that nature has not been expressed as therapeutic in our field, it has (Miles, 1983).

Practitioners and academics generally agree with the premise that nature has inherent

therapeutic qualities and likely contributes meaningfully to individual change processes. One scholar-practitioner has more recently been providing a theoretical framework and case study results to support the notion of nature-based therapy (Berger, 2006; 2007; Berger & McLeod, 2006). These efforts are to be applauded, and should be advanced and built upon.

Further, the reality of widespread use of contact with wild nature in wilderness therapy underscores the significant need to provide evidence in support of this approach, especially in times of heightened liability and ethical concerns that often produce barriers to practice, such as 'being outside' for a practitioner in a conventional office setting. The issue lies in the dearth of evidence to support these universal assumptions of the field.

Testing ART: Nature as 'kernel' of evidence
As adventure therapy and wilderness therapy flirt with the discourse and dominant ideology of evidence-based practice (EBP) in an effort to solidify its standing as a valued therapeutic approach, a number of concerns are present: (1) limitations of the EBP paradigm to capture the ecological contributions of the wilderness therapy process, (2) the lack of theoretical grounding currently articulated in adventure therapy, and (3) the diverse expression of adventure therapy practices (Harper, 2010).

Internationally, the role of EBP in funding of programs and services has become increasingly important, and cause for critical review. Recognizing that numerous political and economic influences drive the EBP paradigm, this paper proposes a judicious methodological approach to EBP research utilizing 'kernels' of evidence in support of one highly significant process variable in wilderness therapy - direct contact with wild nature.

Kernels are influence procedures bringing about behavioural change (Embry & Biglan,

2008). One example is the use of peer-mentors in educational settings that has shown to effectively increase desired academic outcomes. Rather than 'proving' effectiveness of a model of practice or therapeutic approach, kernels can be demonstrated by isolating and evaluating effectiveness of a particular variable. In the example given, simply utilizing student peer support as mentors was shown to increase gains in learning. In the case of wilderness therapy, isolating common elements of practice such as contact with wild nature could be utilized in a basic research approach (i.e. random controlled trials across settings). In short, kernels are the behaviorist researcher's new catchy term for 'components', although they specify that a component may be broken down into parts but a kernel needs to be indivisible to qualify. A wilderness therapy 'solo' experience for example, would not be a kernel as it can be divided into smaller units—reflection, alone time, self care, contact with nature, fasting, journaling etc. It is here cautiously proposed that 'contact with wild nature' may be considered a kernel for outcomes research. That is, a standalone variable to be investigated.

While the reported benefits of contact with nature are broad and supported by a number of theories, research generally supports the premise that it positively influences health and well-being (Kaplan, 1995; Mailer et al., 2005). Contact with nature, if demonstrated as an effective kernel, could gain acceptance as an available EBP for use across therapeutic practices and populations. In contrast to research attempting to demonstrate efficacy of therapeutic approaches or program models, kernels of evidence possess higher likelihood of adoption since they can be simple, affordable, and easily delivered across educational, development and treatment settings. This, versus the significant change required to implement an EBP model with its specific training and fidelity issues make kernels attractive to practitioners (Embry & Biglan, 2008). As a developing field of prac-

tice, wilderness therapy will be influenced by the EBP paradigm; its researchers and practitioners need to ultimately, determine their participation in it. Contact with wild nature may prove to be a significant variable, clearly setting wilderness therapy apart from residential and institutional treatment settings (Harper & Russell, 2008).

Proposed research methodology

A program of research utilizing contact with wild nature as a treatment variable in recognition of ecological influences in wilderness therapy is suggested. Perceptions of potential environmental effect are discussed and suggestions for theoretical development, practice, and future research are offered.

RCT and Contact with Nature

The 'gold standard' approach in EBP research is the double-blind random control trial (RCT), an experimental design in which strong cause-effect inferences are supported (Howell, 2002). The RCT is a key design feature in EBP, demanded by many governmental and fund-granting institutions. Traditional control and treatment group RCT designs have been criticized in human service fields as being unethical (i.e., to delay treatment for control group participants), difficult to maintain fidelity, and impractical due to issues of participant consent, referral support and treatment adherence, among other challenges to internal validity (Victoria, Habicht, & Bryce, 2004). Further, from a practical standpoint, RCT does not tend to provide clinicians with the necessary understanding of how treatment variables effect change or relate to particular client profiles (Davison, 2000). So while published RCTs report outcomes on more- or less-effective manualized treatment approaches (Drew et al., 2002; Liddle et al., 2001), they provide limited understanding of more finite treatment variables that may be applied within a treatment approach. Mechanisms of change have seen limited inquiry in the pursuit of 'outcome efficacy' across treatment re-

search, yet they remain the most important understanding needed to improve clinical practice (Kazdin & Nock, 2003).
One evidence-based alternative to conventional RCT experimental design - with control (i.e. no treatment) and treatment groups - is to maintain the standard treatment approach as the control (i.e. treatment-as-usual, TAU) and alter treatment variables for each treatment group similar to basic experimental research design. TAU in a manualized treatment as a control group allows for research when conventional RCT is deemed unethical or impractical due to acute client needs, costs or logistical issues in participant recruitment. Treatment of high-risk adolescent populations have been successfully studied utilizing TAU in RCT experimental designs (Spirito, Stanton, Donaldson & Boergers, 2002) and provide a template for research which is ethically defensible and more likely to reduce issues of internal validity while providing increased understanding of treatment variable effects.

Treatment groups in experimental research should be rationalized for comparison, strive to test the theories of specific variables and to clearly express the stage of development that particular field has achieved. It is critical to clearly define the variable 'contact with wild nature' proposed for investigation. Second, it is equally important to articulate its relationship to potential enhancements in the treatment process and improvements in outcome. Current theoretical understandings of nature- and wilderness-based treatment is a patchwork of understanding, much borrowed from other social and psychological disciplines. Reference to ART, for example, has been made by authors in adventure and wilderness therapy for decades as an underpinning theory without supportive research from the field (e.g., Davis-Berman & Berman, 1994; Miles, 1987). Further, a theoretical framework on human-nature relationships has been articulated in efforts to encourage use of natural environments for therapeutic

ends (Norton, 2009). RCT research directly evaluating 'built' versus natural (direct contact with wild nature) treatment environments will sustain the assertions our field has precariously relied on, increase the strength of inference of field research, and contribute meaningfully to theory development.

Methodology and instrumentation

The first critical task is to define the settings in which built versus natural treatment environments could be examined. The findings of a study could easily be dismissed without clarity as to how one could replicate the study or implement the kernel in practice. Second, the study would require measures that are designed to reliably capture the data sought; as an example, (a) affective change over time, and (b) whether or not the treatment setting was influential in that change process.

The indoor setting would be best identified and described as one that has no influence of wild nature. Obviously, a built environment with large windows overlooking a beautiful park would not do. If the control group experienced treatment in an entirely 'built' environment (imagine an interview room in the interior of a building without windows - a human-built space), the outdoor setting would ideally be in wild nature (i.e. with minimal to no influence of human built components). While a park setting may be appropriate, the researcher would want to create a metric for 'greenness' or 'naturalness' that could be easily replicated. For example, if the area were photographed, what percentage of the setting is 'built' versus 'wild nature'? Then of course, people will ask whether a manicured garden is 'natural', relative to wild nature etc. Ideally, do what you can to reduce limitations by increasing rigour in design through clear definitions and research procedures.

To evaluate the effects of setting on treatment, the Perceived Restorativeness Scale (PRS, see constructs above in Table 1), intended to measure ART, could be employed to identify whether participants report on the theorized benefits of the built versus natural setting (Hartig et al.,

Our relationship with nature has been professed since time immemorial as integral to our health and a sustainable existence on earth. From the philosophies of First Peoples worldwide, to nature writers, to ecopsychologists, we are continually reminded of the need to remain in a healthy relationship with the natural world we are simply a part of. It is in this acceptance that humans are nature(al) that society may recognize their innate desire to regain balance. A heightened eco-literacy, and awareness of possible action is needed.

The underlying premise that humans would be healthier if more connected with nature may provide a conceptual frame for adventure and wilderness therapy researchers and practitioners to meaningfully lead broader societal change. This shift can only be realized following a clear and direct articulation of the therapeutic value of being in nature that we currently universally accept with limited empirical support. As argued here, it is critical that one of wilderness therapy's key practices, that is, being in direct contact with nature, is based on sound research, which is replicable and respected in other allied helping and healing fields. In doing so, both adventure therapy and wilderness therapy practice may ultimately gain further acceptance across conventional treatment arenas.

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