

Wilderness and Well-Being: Complexity, Time, and Psychological Growth

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Abstract—This paper presents the argument for interdisciplinary wilderness research. The idea of interdisciplinarity is grounded in theories of emotion and psychological growth that are compatible with basic knowledge in other scientific disciplines, and in particular with concepts related to evolution. Considering humans as biological knowledge systems, designed by natural selection to solve the problems faced by our evolutionary ancestors, some attributes of wilderness are hypothesized to be associated with the quality of positive, emotional experiences. This paper assumes that psychological growth takes place when a wilderness landscape is transformed into a landscape of personal meaning. In this process, the notion of cognitive complexity plays an important role, along with the necessity of spending time on processing information. It is suggested that developing cognitive representations from the initially unorganized information provided by an unfamiliar wilderness offers an optimal context for intrinsic motivation and psychological growth.

Introduction

In the papers prepared for the conference on which this proceedings is based, there were some matters almost universally agreed upon. For example, it was agreed that an interdisciplinary approach to wilderness research is highly needed, although it was not agreed upon how exactly to do so. There were also some things that perhaps should have been agreed upon but were not. It was agreed that wilderness is a complex and potentially conflict-laden concept, but it was not agreed how to define it, or whether it should be replaced with another term. Thus, in this paper I will try to address an interdisciplinary audience, and will deliberately use the term wilderness in a “traditional” way, well aware that more proper concepts might replace it as the field matures. For instance, I will not consider political or anthropological discourses of wilderness, acknowledging that I thereby run the risk of stepping on some people’s toes.

Psychology and Benefits of Wilderness

In the psychological literature, the benefits of wilderness are well documented. That humans in general hold high aesthetical preference for natural landscapes, in particular for savanna-like scenes, is recognized in several studies (Ulrich 1993), as is the restorative effect of naturalness (Hartig and others 1991; Kaplan and Kaplan 1989). Moreover, people seem to find meaning and identity by committing themselves to nature (DeYoung 1993; Grahn 1991; Vorkinn and Vittersø 2001), and some evidence seems to exist for a positive relationship between pro-ecological values and quality of life (Gullone 2000; Jacob and Brinkerhoff 1999; Kals 1994). Several theories are offered in the literature to explain these findings, such as the biophilia hypothesis, which states that humans have an innately emotional affiliation to life and lifelike processes (Wilson 1993). Steven and Rachel Kaplan (1989) argue that fascinated attention, as provided in encounters with nature, help people recover from what they call directed attention fatigue so commonly observed in urban life (Kaplan and others 1998). Raymond DeYoung (1993) refers to the advantage of intrinsic motivation in his explanation of the benefits of nature. Although I do not oppose these theories, what I will suggest in this paper is a supplementary view of the benefits of wilderness. I will argue that we need to look at the interplay between cognition and emotion to reveal the mechanisms behind the “positive psychology” (for example, Seligman and Csikszentmihalyi 2000), often reported when people describe their experiences in wilderness, and in particular to look for the functional aspects of this interaction.

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Interdisciplinary Social Science

Committing oneself to a unifying scientific theory is one approach to becoming interdisciplinary, and the lack of such theories is a serious obstacle for an interdisciplinary social science. John Tooby and Leda Cosmides (1992: 23) are particularly critical about the lack of such integrating principles:

After more than a century, the social sciences are still adrift, with an enormous mass of half-digested observations, a not inconsiderable body of empirical generalizations, and a contradictory stew of ungrounded, middle level theories expressed in a babel of incommensurate technical lexicons.

On the other hand, the situation in the natural sciences is taken by these authors as an example of how reliable and deeply satisfactory human knowledge can become. Being integrated into an increasingly seamless system of interconnected knowledge and relevance, disciplines such as physics, chemistry, biology, and geology have witnessed an extraordinary fluorescence throughout the 20th century because of a genuine unity in underlying theory. Actually, Tooby and Cosmides argue that the disciplinary distinction within natural sciences is more out of educational convenience and institutional inertia than out of theoretical barriers.

The goal of an interdisciplinary wilderness approach sought here is relating the explanatory principles of human experience with the explanatory principles in other scientific fields. Primarily, this is done by recognizing that the human mind consists of a set of evolved information-processing mechanisms instantiated in the human nervous system and that these mechanisms are adaptations produced by natural selection (Bandura 2001; Funder 2001; Oatley and Johnson-Laird 1987; Pinker 1997; Tooby and Cosmides 1992).

In particular, theories of complex systems and how they adapt by development and interactions with their surroundings seem a promising core of such a unifying theory. In its broadest outline, some general principles about adaptive complex systems do exist that are able to guide our understanding with regard to how the solar system was formed, the geology of the earth, and the biology of organic organisms. For human beings, the rich complexity of each individual is produced by a cognitive architecture, embodied in a physiological system that interacts with the world that surrounds it. In other words, ecosystems, immune systems, and central nervous systems share many of the same features related to matter, energy, and information (Holland 1995).

This paper will proceed with a short outline of the basic principles of human cognition, emotion, and motivation, based on the principle that information processing generates experiences. Acknowledging that human well-being is founded in subjective experiences, the link between these principles and the quality of a wilderness experience should be rather straightforward.

Emotions and Subjective Experiences

To account for subjective experiences and psychological growth, I will draw on the communicative theory of emotion (Oatley 1992; Oatley and Johnson-Laird 1987). The framework of the theory is that humans are to be understood as biological knowledge systems, an important aspect of which is emotions and feelings. Emotions are part of a solution to problems of organizing knowledge and action in a world that is imperfectly known and in which we have limited resources.

To grasp the nature of subjective experiences, it is important to recognize that emotions have functions. Emotions communicate to us, they configure mental resources, and they make us ready for certain kinds of actions. Emotions also communicate to others, thus causing changes in the modes of our interactions, from cooperation to withdrawal, conflict, or defense (Oatley 1996). Emotions thus refer to the process of adaptation in encounters with the environment, in other words, to the fate of a motivational goal that confronts a beneficial or harmful environment. In general, the functions of the negative emotions are better understood than the positive emotions. Nevertheless, the purpose of this paper is to look into the pleasant side of subjective experiences, and in particular, the subtly different positive emotions of contentment and interest.

Contentment Versus Interest

Contentment arises in contexts appraised by the organism as safe and as having a high degree of certainty and a low degree of effort (Ellsworth and Smith 1988). It functions to prompt people to savor the moment or recent experiences and integrate current and recent experiences into their overall self-concept and world view (Izard 1977).

On the other hand, interest and related emotions such as curiosity, wonder, excitement, intrinsic motivation, and flow arise in contexts that are safe, but also offer novelty, a sense of possibility (Izard 1977), challenge (Csikszentmihalyi 1997), or mystery (Kaplan 1992). According to Izard (1977: 216), interest generates a feeling of wanting to investigate, become involved, or extend or expand the self by incorporating new information and having new experiences with the person or object that has stimulated the interest.

With regard to function, then, there is an important difference between interest and contentment, such that the former works to commit an organism to a task, whereas the latter connects a pleasant experience with the present situation and one's sense of self. In this picture, interest is basically related to intrinsic motivation, whereas contentment is related to extrinsic motivation (Deci and Ryan 2001). Interest involves working on the edge between the familiar and the unknown, enabling the active person to expand his or her knowledge structure, and thus develop the capacity for organizing experiences.

The capacity for intensive experiences depends on the cognitive structure. According to Joseph Sax (1980: 112), this is what Thoreau meant in his famous essay "Walking" when he said:

My vicinity affords many good walks; and though I have walked almost every day...I have not yet exhausted them....The limits of an afternoon walk...will never become quite familiar to you.

Actually, an entire school of thought is based on the idea that a challenging, unknown, or moderately difficult set of circumstances will create a motivational state entailing involvement with that environment (Hunt 1965).

When Do We Get Interested?

More than a century ago, William James (1890: 402, cited in Rathunde 1993: 62) observed that:

...millions of items in the outward order are presented to my senses which never properly enter into my experience. Why? Because they have no interest for me....without selective interest, experience is an utter chaos.

Cognitive psychologists have adopted James' notion of selective attention and created a discipline that describes in great detail how things that are noticed shape our minds. Less often is the motivational question of why asked. However, in experimental psychology from Berlyne (1960) and onwards, "complexity" and "novelty" have been observed to catch our attention. We still need to learn more about the factors determining why some complex objects catch our attention while others do not (during an ordinary day we run into a lot of situations or stimuli that are potentially complex to us), but two important conditions for interest are constancy and change (Rathunde 1993). Wilderness environments are affluent with regard to both constancy and change and should thus provide almost perfect surroundings for eliciting feelings of interest.

Another important factor that only recently has been considered, is "time." It takes time to process information, and the more complex patterns of information to be dealt with, the more time is needed to do the computation. According to recent thinking in cognitive science, complexity can be defined as a function of the time required to process a certain amount of information (Bennett 1988). In other words, complexity is related to the throughput, not the output. What makes something interesting is probably the very process of transforming unfamiliarity into familiarity and not the unfamiliar or familiar stimuli as such. My speculative hypothesis, then, is that what wilderness provides in terms of being able to catch peoples' interest is a frame of mind allowing people to take the time necessary for them to get

involved with the often time-consuming task of untangling a complex pattern into something that gives meaning.

Interest and Wilderness

"Time is but the stream I go a-fishing in," Thoreau said, and paraphrasing Oelschlaeger (1991), Thoreauvian time is organic, a temporal flow to be enjoyed immediately. Such a time concept contradicts that of the modern world view, and if it can be promoted by wilderness, it might be one of its finest contributions to psychological growth. Moreover, wilderness invites us to intensively experience rather than intensively use. Encountering arctic ecosystems, humans are on their own, discovering what is interesting and going at their own pace. According to Sax (1980), wilderness provides a contrast to the familiar situation in which we are bored unless someone tells us how to fill our time. In well-known ideas of wilderness, expressed for example by Henry David Thoreau, John Muir, or Aldo Leopold, the notion of living a simple life in close contact with Mother Nature stands in sharp contrast to the almost thoughtless hedonism dominating the materialistic ideologies of modern societies. Thoreau (cited in Oelschlaeger 1991: 153), for instance, wrote:

I wanted to live deep and suck out all the marrow of life, to live so sturdily and Spartan-like as to put to rout all that was not life.

It is interesting to note that research on happiness and subjective well-being is beginning to disclose some psychological costs of a modern lifestyle. Several studies now report a negative correlation between a materialistic attitude and subjective well-being (Ahuvia and Friedman 1998; Csikszentmihalyi and Schneider 2001; Keng and others 2000; Myers 1999; Swinyard and others 2001; Wright and Larsen 1993). Moreover, studies done by Csikszentmihalyi and his colleagues reveal that children from the most affluent families tend to be more bored, less involved, less enthusiastic and less excited compared to less well-to-do children (Csikszentmihalyi 1999: 826). Based on these findings, one might speculate whether the affluent modern life deprives its residents of developing the necessary capacity for positive but nonhedonistic experiences of some duration. It is against this context that the wilderness experience proves valuable in terms of creating in humans exactly that capacity for organizing positive experiences and lasting commitments to central values in one's life. Given that wilderness offers novel and complex stimuli, and a recreational mode that allows for an interested and lingering attitude toward the elements of the setting, it has the potential of framing what we might call psychological growth.

Conclusion

In this paper I have argued that a possible avenue for interdisciplinary wilderness research is to provide explanations that are integrated with established scientific theories. In the current presentation, it is recognized that the human mind consists of a set of evolved information-processing mechanisms instantiated in the human nervous system, and that these mechanisms are adaptations produced by natural selection. More concretely, it is suggested that emotions serve motivational functions, and that different emotions serve different purposes. In this respect, the feeling of interest plays a crucial role in attracting attention and to committing individuals to purposeful goals and life tasks. It was speculated that wilderness offers novel and complex stimuli in a context without the pressing time constraint that normally dominates modern lifestyles. In addition, time is crucial for a meaningful interpretation of novel stimuli, and thus for cognitive growth. Hence, the time rhythms of arctic ecosystems might be an important resource for psychological growth.

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