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NATURE IN THE EYE OF THE BEHOLDER

Nature is always hinting at us. It hints over and over again. And suddenly we take the hint.

The “hint” Robert Frost had in mind is more likely to be a multitude of hints. Nature’s hints come in many shapes and hues. They are colored by the season but also by the eye of the beholder. One person’s weeds may be another’s aesthetic joy. One person cuts the trees down, another mourns the loss. So many hints, such pervasive consequences.

Nature has offered hints for many generations. Their interpretations have led to a vast array of approaches and to momentous outcomes—conquering the wild or respecting it unchanged, modifying it for the benefit of a particular species or recognizing requirements of multiple species, maximizing nature’s offerings for today or considering the needs of the morrow. Legitimacy for these diverse transformations has come from many sources—theology, aesthetics, politics, ecology, design, planning, management, to name a few—each guiding directions with good intentions and remarkable confidence. Given that each new generation revisits the solutions of its predecessors with fresh conviction and altered views, it seems reasonable to assume that the hints we hold dear today will also be replaced by generations to come.

Even if we take only the current moment in time as our context, interpretations of nature’s hints are many. Debates over appropriate ways to manage nature have proliferated; angry confrontations over these issues have become more frequent. Resolution of these discrepant perspectives would be simpler if there were undeviating answers to questions that are quite

easy to pose: What is nature? Whose is it? But the answers are hardly straightforward; they reflect the different visions of their beholders. As is true in so many contexts, the realization that others see these issues differently can be startling.

I was certainly surprised many years ago to hear someone exclaim, "Isn't it wonderful, here in the wilderness, away from everything." The person was standing in the University of Michigan's Nichols Arboretum, by the railroad tracks, in sight of tall buildings, residences and an unpaved parking lot with cars in it. There were many trees in view, as well as the river in the valley below. To consider this a wilderness seemed amusing, if not naive. It would have never occurred to me to consider my childhood hikes in a woods along a meandering river at the edge of the city as "wilderness" outings. Nor would it have occurred to me that these long walks in the woods would not meet everyone's criteria for a "nature" hike.

My sense of what qualifies as "nature" has been transformed by several decades of research on the role of the natural environment in people's well-being. This essay is a reflection of that journey. It is thus a tale of a research odyssey: many studies, providing conceptual insights, and these, in turn, leading to more empirical input, which further shaped the guiding framework, suggesting yet further studies. This is hardly a solo trip. Stephen Kaplan has been the originator of much of the theoretical work and has played a major role throughout the research program. Fellow travelers also include the thousands of study participants as well as many dozens of colleagues, students, and other investigators who have been intrigued by the quest. Collectively, over the three decades, the research helped us to appreciate that while nature may be in the eye of the beholder, the beholders are remarkably consistent in how they view nature. It would be a mistake, however, to ignore some noteworthy discrepancies among them. The purpose of this essay is to share some of the insights we have gained about the common ground and the reasons for different views. I hope these can be useful in fostering more harmonious approaches to interpreting nature's hints.

Although my account is not told chronologically, I want to anchor it historically with our first study, which dates to just around the first Earth Day (1970). Jack Wohlwill, a psycholo-

gist interested in aesthetics, had taken a bold step by using photographs of real environments rather than the artificially-constructed geometric patterns that were standard at the time. This meant abandoning close control over the complexity of the stimulus and instead asking a panel of judges to rate the scenes for their complexity. Wohlwill reported that, much as in previous work, study participants most preferred the scenes that were middling in complexity.¹ We were, however, troubled by several aspects of the study. First, the data were unconvincing (and statistically nonsignificant). Only fourteen scenes were used in the study, and those of middling complexity showed substantial variation in preference, providing little basis for confidence that complexity can account for the results. A related and perturbing issue was the lack of consideration of what the scenes were about. On intuitive grounds, it would seem that the content of the scene might make a major difference.

Wohlwill's work provided the inspiration for John Wendt's Psychology honors thesis.² His study included fifty-six scenes, carefully selected to test the hypothesis that the content of the scene influenced preference. About half the scenes were of natural settings, divided evenly between those showing more or less human influence. (An example of more human presence would be a car parked along an unpaved road in a wooded setting.) The other half were urban and residential scenes, divided evenly between those showing more or fewer natural elements. (An example of natural features in a built setting would be a scene with young trees in a downtown open space surrounded by tall buildings.) The findings provided strong and clear indication that nature scenes were greatly preferred to scenes of the built environment. That is not to say that all nature scenes were equally favored; for example, scenes of larger mowed areas with shrubs along the edge were somewhat lower in preference. Nonetheless, the scenes selected as natural settings, regardless of the degree of human influence, rated more favorably than those of the built environment. The study did not find the curvilinear relationship that Wohlwill had reported with respect to complexity; in fact, for the scenes as a whole, complexity was not significantly related to preference.

The study inaugurated an area of research that has had far-

reaching consequences. It launched several methodological innovations, provided the first empirical support for preference for natural environments, and established that in the eyes of the public, "nature" includes even relatively mundane, everyday settings. In the remainder of this essay I want to discuss several themes that had their beginning in this study. The first of these concerns the question "what is nature?," with the answer drawing on what we have learned from the perspective of the general public. The second theme looks at the question, "whose nature?" I then conclude with some implications of nature's multiple hints and beholders' diverse passions.

Nature: Inclusive and Beloved

Consider the following images: deciduous forest, riparian corridor, landscaped estate, golf course, farm. Does each qualify as "nature"? What if there were several mature trees in each of the settings—would that change the answers? Are grasses that are mowed perceived differently from grasses that are left to grow? Is "nature" a function of species, practices, scale, or intended use?

For the general public many places, big and small, would be considered "nature." It is clear from a substantial amount of research that "nature" is a remarkably inclusive category.³ People often refer to nature as "green," though much that they consider to be nature lacks that characteristic. As we have seen, the presence of the built environment and human artifacts does not automatically disqualify a setting from being considered natural. Whether nature is perceived as a single broad category or as more distinct separate categories depends on the diversity of scenes included in a particular study. If a study focuses exclusively on natural settings, the subtler distinctions will be apparent. In such instances, farmland, large mowed areas, dense forests, and parkland might be perceived as separate categories. On the other hand, if the study samples scenes that vary widely, it is generally the case that "nature" emerges as a single broad category.

Not only is the word "nature" used broadly, a great diversity of settings are perceived as natural. And natural places are beloved. We are not talking here of spectacular places: red-

wood forests, snow-capped mountains, or the engrossing images of coffee table books. The studies have mainly focused on the kinds of settings that are generally familiar and more readily available to study participants. In study after study, the natural scenes receive higher preference ratings. Water can significantly boost the preference; trees—even a single tree—can greatly enhance people's delight in the setting. Even without water or mature trees, however, the presence of vegetation impacts preference.

Asking people about their preferences has been very informative. However, support for the inclusivity of the nature category and the importance of nature to people does not depend on this approach. In fact, startling evidence has come from studies that are based neither on asking people about their feelings toward nature nor on whether they consider settings to be examples of "nature." Particularly striking have been studies with disadvantaged populations, such as prison inmates and people living in poverty, where the focus has been on the relationship of nature and psychological health.

Ernest Moore's study offers a dramatic example.⁴ It was carried out at what was then the world's largest walled prison, with over 4,000 inmates. Moore was interested in studying factors impacting prisoners' well-being. To his surprise, a significant factor was the view from the prison cell. The design of the walled prison permitted some men to have views of the surrounding rolling farmland and trees; others viewed the prison courtyard or could see fellow prisoners in the facing cell block. The use of the prison's health care service was directly related to the location of the cells. Those viewing the outside world, and thus fields and farms, used the health care services far less than did the others.

Bill Sullivan, Frances Kuo, and their students have carried out a series of studies at the largest public housing development in the world, the Robert Taylor Homes in Chicago.⁵ The site consists of twenty-eight sixteen-story apartment buildings mostly surrounded by concrete and asphalt. The researchers have documented ways in which the presence of even a few trees in this stark environment can make major differences in the civility and mental health of the residents. Residents living near the occasional "pocket of trees" felt safer and better adjusted to living at the housing project; they were

less likely to adopt violent strategies as solutions to problems. Further, adults as well as children were more likely to gather and socialize where there were trees. The numerous studies conducted by this team have provided significant evidence for the ways in which the availability of "green landscapes" impacts the lives of inner city people living in extreme poverty.

Many years earlier when Kathy Stribley⁶ was working with public housing residents, as part of her Master's thesis in Landscape Architecture, she would tell me of the anger and frustration the residents expressed about the lack of trees in their community. They commented that they too enjoyed listening to the birds chirping in the trees. At about the same time the New York City Housing Authority addressed similar concerns by initiating a flower garden competition; the benefits of this program have far exceeded anyone's expectations. Charles Lewis documented some of the remarkable ramifications of these efforts.⁷ I remember his tales of tenants on upper floors, binoculars in hand, surveying their treasured garden and relaying sightings of potential vandals to residents on the ground floor who could take quick action. Lewis had pictures of the red and white paint residents had applied to the adjacent exterior wall of their building to provide a matching backdrop for the color scheme of their flowers. They may not have had trees, but for these individuals even their flower patches constituted "nature." And their involvement with nature provided the vehicle not only for aesthetic pleasure, but for networking, esteem, and sense of competence.

Using flowers and plants to express gratitude, grief, joy, and friendship is not a recent innovation of the florist industry. The gift of flowers has long been a source of satisfaction both for the person who receives them and the one who grew them. Gardening, in its many varieties, provides what for many people is the most readily available form of contact with nature.

What people relish as "nature" includes the vegetation in the distance as well as what is nearby, the single tree or the grove of trees, the flowers they grow and those they see. Nature can come in big parcels or small patches. A memorable Cobb cartoon shows a paved mall amidst skyscrapers; a lonesome elderly person, sitting on a bench with arms folded on his lap and his cane resting beside him, is savoring the small

plant that has erupted in the cracks of the concrete. Nature may be manicured or wild; it can show up in surprising places.

Dominant and Variant

Many studies have shown that people like natural settings and that what qualifies as nature is broadly defined. This can be called the "dominant" position.⁸ It is also the case that nature settings are not all equally liked and that what qualifies as nature is not universal. These are the variations on the dominant theme, and they come in many kinds.

Some variant views were starkly communicated to us by a few reviewers of our book, *With People in Mind: Design and Management of Everyday Nature*.⁹ They were dismayed by what they considered our misuse of the word "nature," in the book's title and elsewhere. We were told that it is inappropriate to use the N-word for manicured places, conceding its use if properly modified (e.g., "manicured nature"). One reviewer was doubtful that (true) nature can be found in an urban context. This view is reminiscent of the Recreation Opportunity Spectrum, a typology promoted by the U.S. Forest Service for managing its lands for public uses. At the "urban" end of the spectrum, settings are characterized as having "natural-appearing elements" and people's desired activities are "for experiencing affiliation with individuals and groups." As ample research has shown, however, for many people living in an urban setting, trees are not "natural-appearing," they are nature. Furthermore, while natural settings may be used for social activities, they are also treasured places for solitude and tranquility.¹⁰

What accounts for the variant views? A one-word answer is expertise. One becomes an expert through substantial experience: formal training, practical work, self-instruction, tutored observation, frequent exposure. Invariably and invisibly these experiences change the way one sees and understands (in the areas of one's expertise). One acquires knowledge but is unaware that the knowledge leads to seeing differently. The eyes of the beholder have new lenses. The view is sharp and clear; it is also atypical. It is easy to assume that others have

equally adjusted glasses and see in the same way. We are all experts and all rely on experts. Despite its many benefits, however, expertise can also be the source of substantial discord, dismay, and damage.

Many kinds of expertise are relevant to the question of "whose nature?" Accepted definitions of nature and perceptions of appropriate ways to manage it differ in many ways, big and subtle. Forest managers, ecologists, farmers, and environmental activists may see the same situation in substantially different ways, all discrepant from each other and from the perception of the general public.

As the differences have the potential to affect places about which people care deeply, the emotional consequences can be passionate and painful. The recent controversies over ecological restoration in Chicago provide vivid examples.¹¹ Similar, if less heated contentions, are common.¹² Robert Ryan's dissertation¹³ looked at perceptions of areas where invasive plants had been removed and found that the volunteers and professionals involved in these efforts viewed the results with much greater satisfaction than did the nearby residents. Dennis Rodkin's essay,¹⁴ "Nature vs. Nature," offers valuable imagery of the contrasting views of two men, both "pro-nature," both scientists, both raised in Kansas, and both knowledgeable about a particular large parcel of Forest Preserve land. One sees the removal of invasive species as transforming the place to a "cleaned-up park," while the other considers it a way to "reveal the oaks' majestic forms." One argues that the wetland transformation will increase the beaver population, the other bemoans the loss of muskrat. Is the removal of trees to make way for prairie justified by reference to the plants that existed at some point in history? Will future generations replace the prairie grasses with plants that are appropriate to a different historical context?

People's preferences are likely to reflect their activities. It is hardly surprising that snowmobilers, equestrians, hunters, sports fishers, golfers, and many others have desires for places that foster their recreational pursuits. To some degree these are bases for expertise as well, although they are more clearly expressions of personal interests and inclinations. When people practice their professional roles, by contrast, they are often more likely to see a single appropriate solution.

The greater knowledge and responsibility of their expertise can make it more difficult to see alternative approaches as having standing as well. As several studies have found, many professionals are not perceptive about the differences between their own and the public's perspectives. Differences in perception on the part of the public are readily attributed to ignorance rather than being considered a potentially complementary kind of local knowledge.

Nature's Hints and Beholders' Passions

The dominant and variant perspectives show important similarities. Strong affection for "nature" is unquestionable. Familiarity and experience affect what is valued. There is an intense desire to do the "right" thing. Yet whatever their view, beholders find it difficult to acknowledge that there may be more than one best path to take.

These similarities unfortunately do not preclude major differences in the interpretations of nature's hints. The ideological stances of different groups are more likely to convince believers than produce converts. Conflicts arise, tempers flare, and distrust abounds. All too often, there are no winners. The experts and the public both feel they are misunderstood and not respected; at the same time, the treasured "nature" suffers as well. What are some ways to avoid these misfortunes?

The different perspectives depend on differences in experience. A solution would, thus, involve shared experiences and understanding. This is not the same, however, as the primary solution so often recommended by experts: to educate the public. There are many issues the public does not understand, and more knowledge could help the public to appreciate the directions professionals recommend. At the same time, however, the experts could benefit from a better understanding of the public's concerns. Experts also often need a greater appreciation of the perspective of other areas of expertise. And while expertise tends to confer confidence, there is little evidence that it precludes error.

Sharing information must be recognized as a challenging effort, requiring multiple strategies and a sincere desire

to impart as well as to receive knowledge. Well-intended efforts to educate have been known to do worse than fail to inform; they can antagonize and can spoil subsequent endeavors. Listening to what people say is not easy when one is convinced that they are misinformed. For participation to be genuine, the public's perspective must be allowed to make a difference.

A great deal of education can take place in the context of working with volunteers. We have found that those who do participate in stewardship activities have a great desire to learn.¹⁵ At the same time, their involvement provides social opportunities and the chance to do something that contributes to the betterment of the natural environment. However, the great enthusiasm that volunteers have shown through long-term and deep commitment is not a signal that their hard work is appreciated by those whose view is dramatically altered. Formats for participation of the public and openness to various kinds of problem-solving are essential.

Nature's multiple hints are thus likely to call for multiple responses. If one acknowledges that there is not only one right answer, then several approaches can be tried. Experimenting with different variations permits learning from each. Sometimes "natural" experiments help show the way to alternative approaches. An interesting example is provided by recent studies of the recovery of the Mount St. Helens region, which have demonstrated that numerous strongly held expert beliefs about ecosystems were far off the mark.¹⁶ Useful experiments, however, can also take place on a smaller scale; a series of small experiments can show how readily even small changes can make big differences both with respect to the actual results and in terms of building trust and enthusiasm. What once seemed an intractable dilemma can have a satisfying outcome.

The fact that natural places are so deeply cherished is part of the problem and the solution. Passion makes problem-solving more difficult but at the same time may make a satisfactory resolution more eagerly embraced. The hints we need to take must be responsive to each other's interpretations and to nature's signals as well.

NOTES

¹J. F. Wohlwill, "The Emerging Discipline of Environmental Psychology," *American Psychologist* 25 (1970), 303-12.

²S. Kaplan, R. Kaplan, and J. S. Wendt, "Rated Preference and Complexity for Natural and Urban Visual Material," *Perception and Psychophysics* 12 (1972), 354-65.

³Documentation for many studies is provided in R. Kaplan and S. Kaplan, *The Experience of Nature: A Psychological Perspective* (New York: Cambridge University Press, 1989; republished, 1995, by Ann Arbor, MI: Ulrich's).

⁴E. O. Moore, "A Prison Environment's Effect on Health Care Service Demands," *Journal of Environmental Systems* 11 (1981), 17-34.

⁵It is well worth a visit to their web site, www.aces.uiuc.edu/~herl/, to appreciate the far-reaching and innovative research they have done. The web site lists some of their publications.

⁶K. A. Stribley, "Looking Back on Public Housing," Unpublished Master's thesis, University of Michigan, Ann Arbor, 1976.

⁷More details on this ongoing competition in New York can be found in a section on "growing self-esteem" in Charles A. Lewis, *Green Nature / Human Nature: The Meaning of Plants in Our Lives* (Champaign: University of Illinois Press, 1996).

⁸Florence Kluckhohn discussed "Dominant and Variant Value Orientations" in C. Kluckhohn and H. A. Murray eds., *Personality in Nature, Society, and Culture* (New York: Knopf, 1953). She suggests that all cultures develop a dominant solution to certain "basic human problems" but that variant solutions are identifiable for specific groups within the culture.

⁹R. Kaplan, S. Kaplan, and R. L. Ryan, *With People in Mind: Design and Management of Everyday Nature*, (Washington, DC: Island Press, 1988).

¹⁰*The Experience of Nature*, op. cit.

¹¹*Restoring Nature: Perspectives from the Social Sciences and Humanities*, edited by Paul Gobster and Bruce Hull (Washington, DC: Island Press, September 2000), includes several essays that concern the controversy over these ecological restoration efforts.

¹²These issues have received considerable mention in *Science*, for example: K. Kloor's coverage of "Returning America's Forests to Their 'Natural' Roots" (28 January 2000, 287, 573-75) and letters it generated (i.e., M. A. Davis, 18 February 2000, 287, 1203, and T. A. Alcoze, W. W. Covington, and P. Z. Fulé, 24 March 2000, 287, 2159). Karl Butzer's review of Charles Redman's "Human Impact on Ancient Environments" (*Science*, 31 March 2000, 287, 2427-28) offers a useful historical perspective on some of these issues.

¹³R. L. Ryan, "Attachment to Urban Natural Areas: A People Centered Approach to Designing and Managing Restoration Projects," in *Restoring Nature*, op. cit.

¹⁴D. Rodkin in *Chicago Tribune Magazine*, 2 April 2000.

¹⁵R. Grese, R. Kaplan, R. L. Ryan, and J. Buxton, "Psychological Benefits of Volunteering in Stewardship Programs," in *Restoring Nature*, op. cit. Also, R. L. Ryan, R. Kaplan, and R. Grese, "Predicting Volunteer Commitment in Environmental Stewardship Programs," submitted for publication.

¹⁶R. A. Lovett's account of "Mount St. Helens, Revisited" (*Science*, 2 June 2000, 288, 1578-9) is rich in accounts of ecological surprises, such as species migration patterns, and the impacts small random events can have on the dynamics of the process.