

**MONITORING, SIMULATION AND MANAGEMENT  
OF VISITOR LANDSCAPES**

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## CHAPTER 2

# WHAT VISITORS “DO” IN RECREATIONAL LANDSCAPES: USING CATEGORIES OF AFFORDANCES FOR EVALUATION, DESIGN AND SIMULATION

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Abstract: Contrasting with frequently more normative and holistic views of landscape meaning, and omitted in published approach summaries are recent appropriations of J.J. Gibson's affordance theories in applied fields of design even including larger settings at the scale of landscape. Rather than assume a holistic complexity, one can begin with specific events or situations where people are actively involved in “doing” something as a transactional interaction between themselves and the physical setting. The psychological ability to comfortably dissociate one event from another diminishes the need to more holistically perceive or use the landscape. Object, space, action are the necessary ingredients to describe and eventually simulate affordances. Instead of considering holistic places or scales of places as composites of affordances, social science literature - from psychology to culture - suggests that certain kinds of affordances tend to experientially string together at larger scales. The categories of wayfinding and task performance are immediately understandable in their function. Visual and non-visual aesthetics contrasts the intrinsic or even innate aspects of natural form with socially motivated experiences, which themselves can be distinguished as simple territoriality and symbolic or cultural expression. While significantly reduced in apparent complexity from normative and holistic approaches to landscape, a reasonable assessment and simulation of all categories of specific “doings” nonetheless can achieve a rich understanding of visitor experience for practical uses by designers, simulators, and managers.

Key Words: Affordances, Wayfinding, Task-performance, Social Territories, Cultural Expression, Visual/Non-Visual Aesthetics

### THE AFFORDANCE APPROACH

Even though the physical scale of recreational landscapes can obviously be quite large with an equally large set of possibilities of visitor activities, the idea of “affordances” may allow us to focus more effi-

ciently on specific realities of experience. J. Gibson's (1966) concept of affordances is quite straightforward as used in applied processes. As an example of more typical small scale studies of affordances, yet with some complexity, one can cite Boschker et.



Figure 1. Climbing a rock wall. (Photo by Steve Hawkshaw)

al.'s (2002) comparison of the way experienced and inexperienced rock climbers understand physical form (holds on a climbing wall) as opportunities for, and dangers of, action. They speak of abilities to use "fine" or "course" grain affordances, "chunking" and "nesting" of information as they think about and execute a route up the wall. The inexperienced climbers attended to relatively superficial, structural characteristics of the climbing wall, rather than to the specifically useful details and routes necessary for a successful climb. Moving to a larger scale than that of rock climbers, and coming out of a center for urban and regional studies is a comparison of children's affordances in a continuum of settings from the rural to the urban (Kytta 2002). Here the researcher asks children about thirty-four different kinds of physical activities, such as running on flat surfaces, jumping on certain things, swinging, playing with water, and the like. Each is referred to in the manner of "affords skipping" or "affords skateboarding", for example.

While somewhat predictable, more affordances were possible in the rural settings with their greater landscape attributes.

At a similar scale, but addressing the largely unresearched assertions of New Urbanism, we find a recent planning dissertation using Gibson's ideas of affordances, along with place theory of Canter (1991). This comparison of New Urban town centers (Disney's new town, Celebration) and conventional shopping centers (Bohl 2004), focuses on twenty-five affordances that fuel the statistical study. While some of these kinds of setting integrated activities seem vague as affordances, e.g. "this is a center of activity and meeting place for the community", others are much more to the point, e.g. "this would be a good place to sit and watch people", or "this would be a good place to ask for signatures in support of a new local law" (ibid:127). Often when researchers ask questions of landscape users, the labels of experience tend to be more implicit than specific. In a study of greenway trail users in Chicago (Gobster 1995), for example, informants were queried about positive or negative effects of physical elements, e.g. "scenic beauty", "smooth trail", "safe", "close to home" etc. While some actual affordance or experience can be connected to these typological labels, one cannot be certain about just when or how long specific aspects of the physical setting were actually being used. A more recent Danish study of recreation in forests (Jenson & Koch 2004) also raises questions about specificity; it asks respondents, via mail, about nineteen nominally separate experiences, e.g. "going for a walk", "enjoying nature", "studying nature", "going for a drive", "sitting still", "exercising". While users might rely on these terms to define their reason to go to the forest, their actual experiences there might well be much more specific.

People are usually aware of what their

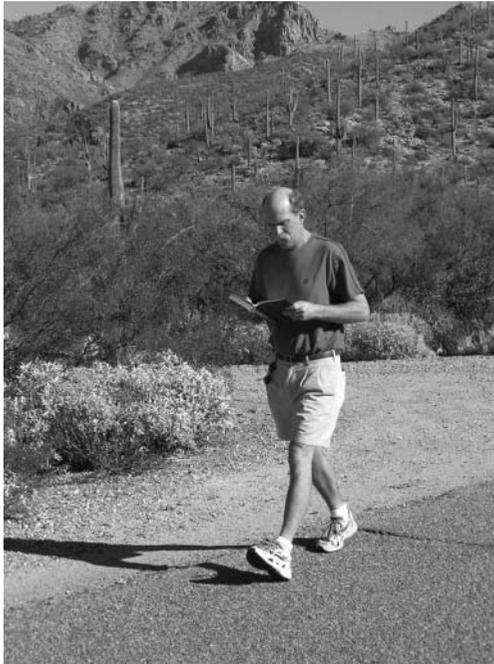


Figure 2. Reading while walking (Photo by Sabino Canyon, Arizona)

attention is currently focused on. Holists would probably argue that a good deal of environmental attention is being paid to things not immediately connected to what people report doing at specific times and places. Nevertheless, there may be little evidence that this peripheral or background use of the physical setting is very important. Even though people are always in one sort of physical setting or another, a good deal of the time the environment plays only a minor background role compared to a more purely "medial" exchange of information. We spend a lot of time talking or listening to other people talk, both in real encounters and in those extended by electronic media. We also may be reading a book, watching a T.V. program, on the internet, or just thinking about something, none of which again seriously involves larger physical settings and their affordances. It is also true that we spend about a third of our time sleeping and dreaming.

In this writer's opinion most designers and many landscape theorists radically overestimate the actual amount of time that the physical environment significantly holds the attention of human beings. Even though managed landscapes are billed to be much more interesting, in this regard, it is a good bet that a not inconsequential portion of the time visitors are doing things that do not heavily depend on physical environmental affordances.

#### CATEGORIZING WHAT PEOPLE DO IN VISITOR LANDSCAPES

As one attempts to operationalize important environmental affordances in evaluation, design or simulation, there appear to be certain logical or informational differences between kinds of things people do with physical settings. Typically when professionals program or evaluate settings they begin with very open ended observations or questions. Often these inquiries are more in the vein of a "walk-through" where users are encouraged to report about various aspects of the setting that they think important, for whatever reason. If one attempted to frame the evaluation in terms of what people "do", where would one start? When walking around a setting, or viewing a film, one could ask what users do or have done in certain part of the scene. Yet here too a bias would exist toward a sort of site determinism. Again much of the time visitors or users won't be using the setting very intensely at all, and it follows that any recollection of setting specific episodes in the context of the overall stream of experience might be difficult. How can one be sure that all the significant, shared environmentally based experiences are recorded?

It is also true that most evaluations of physical settings are in the form of case studies often with resulting guidelines (Francis 2001, Cooper-Marcus and Sarkisian 1986). The overall physical setting is

again the primary point of departure. While case studies obviously generate good usable information about how people use settings, nevertheless, their somewhat holistic or at least *ad hoc* nature tends to make cross study comparison more difficult. More importantly, without some overriding understanding of potential kinds of user experiences, risks of omission could be high.

This paper introduces the possibility of categorizing different kinds of environmentally important affordances as a means of facilitating important processes of design, simulation, and eventually new significant research. The distinction of affordances for purposes of *wayfinding*, *task-performance*, *social territories*, *cultural expression* and *visual/non-visual aesthetics* can initially be useful in prompting people to recall all the different kinds of experiences one did or might do in a setting. This taxonomy can then be used to structure information about environmental experiences in subsequent processes of design schematics and simulation, most of which involve the management of input from multiple user groups.

This way of thinking is not at all dissimilar to McHarg's (1994) layers of independently considered components of landscape. His layers, however, are ecologically or infrastructurally constituted. These are quasi-systematic physical aspects of the environment operating somewhat independently of each other, competing and sometimes cooperating in the appropriation of the landscape; see for example Schrijnen's (2000) discussion of how urban infrastructure relates to more natural or green landscapes in the Netherlands. Most aspects of natural ecosystems or even built infrastructure, e.g. engineered structures or mechanical systems, are not primarily created as active affordances for human beings. Even though these processes eventually affect every person and

animal on the planet, a very large part of our physical settings are not actively attended to as part of what we "do". The more ethical interest in making ecology and infrastructure "affordable" or bringing aspects to a level of actual experience is a relatively minor subset of mapping significant setting based experience, even though some perceptual and cultural studies of the landscape work in this dimension.

While McHarg's layers are primarily ecological and infrastructural, adaptations of this methodology often include a more clearly human dimension, ranging from the psychological to historical or cultural contents. While not really developed as affordances *per se*, this essentially experiential layer might itself be composed of sub layers of categorical affordances potentially stringing across the same overall landscape setting. They may or may not actively interact with aspects of the ecological or infrastructural layers, depending again on what people are doing.

### WAYFINDING

Perhaps the most fundamental kind of affordance helps the individual maintain his or her orientation in physical world. Following Lynch's (1960) and Appleyard's (1970) early work, this has been one of the



Figure 3. Planning the route" (Photo by Sabino Canyon, Arizona)

most easily understood, and most specific kind of environmental information. It is also true that understanding the objects (landmarks), spatial relationships (paths or routes), and action of *wayfinding* exemplifies the way smaller affordances can string together in mapable structures across the larger landscape, both urban and natural. Much of the *wayfinding* application has naturally occurred in regard to complex, intensely used architectural settings, e.g. Authur and Passini (1992). Case study examples appear in Baskaya et. al.'s (2004) mapping of user polyclinic affordances in *wayfinding* critical medical facilities. More recently, Space Syntax has also been adapted to architectural settings such as hospitals (e.g. Haq & Zimring 2003), illustrating how this often larger scale methodology might be adapted to visitor landscapes.

Coming out of Space Syntax methodology as well are studies of “least-angle” strategies of *wayfinding*, where users tend to rely upon the spatial affordances of straightest lines between known aspects of a setting (Hochmair 2005, Dalton 2003). Differences in individual strategies of *wayfinding* by different kinds of users, as emphasized earlier in Appleyard and Passini are also maintained in recent studies. Lawton and Kallai (2002) combine both cross-cultural and cross-gender characteristics in their study of men and women in Hungary and the United States. Men in both countries preferred global reference points, while women were more likely to use strategies of route information. Cultural differences were less gender specific and clearly involve social meanings of environmental experience, such as personal safety, and fall into other *non-wayfinding* categories. This sorting out of distinct affordance categories was also problematic much earlier for Lynch and other cognitive mappers.

In a similar vein, but from the business



Figure 4. Checking the map (Photo by Sabino Canyon, Arizona)

and management field, we find a study of men’s use of landmarks and women’s use of verbal messages to find destinations in a shopping mall (Chebat, Chebat, & Therrien 2005). This is a relatively clean evaluation of *wayfinding* information as a specific category, although some meaning and preferences of consumer products and advertising enter into the researcher’s agenda. As will be illustrated below, one can independently distinguish such object, spatial and action components of distinct kinds of affordance as *cultural expression*, not *wayfinding*.

Even though most *wayfinding* studies target more intensely used and perhaps more critical building and urban settings, some work moves in the direction of visitor landscapes. In spite of occurring in a small-scale totally created artificial setting, Vosmik & Presson’s (2004) research on children’s map-reading abilities has implications for any setting, built or natural. Soh & Smith-Jackson (2004) look at map reading in rela-

tion to individual differences and culture as users find their way along trails in recreational landscapes. Many visitor landscapes involve the use of maps by not only children but others with perhaps different information processing preferences.

Signs are often an important part of *wayfinding* for first-time visitors, whether in hospitals or landscapes. Thompson et. al. (2004) focuses primarily on signage in her evaluation of how visitors know where to go on arrival to a forest recreation area in Britain, and how they map routes to various sites in the larger setting. This work particularly fits the present context because of their definition of specific situations associated with: "pre-arrival information (Where do I want to go? What is the site called)"; "approach routes (How do I get there?"; "finding the site entrance (Is this the right place?"; and "arrival on site (What can I do)" (ibid 40).

Returning to affordance literature, we first see the detailed example what the rock climbers (Boschker, Bakker & Michaels 2002) appear to be doing as *wayfinding*. Yet if we look closer, what connects the handholds across the climbing wall is not their orientation to each other *per se*, but how they are used to physically support the movement of the climber. This is an example of *task performance* or even *non-visual aesthetics*. It is also true that neither Kytta's (2002) listing of children's activities, nor Bohl's (2004) indices of New Urban affordances contain *wayfinding* experiences.

The only possible *wayfinding* experience included in Jensen & Koch's (2004) survey of Danish forest users might be found in their "followed marked paths". Presumably this is a *wayfinding* experience based on reading signs, although other kinds of content, e.g. such as an interpretative time line, might be communicated by marked paths. The researchers do not include an experience such as "got lost", which even

if reported would not specifically define their attempted affordance use of the physical setting at the time. Gobster's (1995) list of attributes of Chicago greenway experience, not dissimilarly from the Danish forest study, only includes the negative issue of "poor signage". Again this may or may not be *wayfinding* affordance.

Clearly much work is needed to develop good, specific descriptions of object, space and action relative to those instances where visitors are "doing" *wayfinding*. What are the specific object features in visitor landscapes being used as landmarks, including aspects of the natural and built setting, and signage? What are the specific spatial strategies the user is aware of in trying to cognitively map orientations between landmarks? How does the user move around in the setting in a focused effort to better understand landmarks and spatial orientations?

#### TASK-PERFORMANCE

In considering the work that people do, it is clear, for example, that affordances of the physical setting may be more important in the case of a construction worker than for an accountant. In experience where the physical setting is actively involved, not just as background, we can describe object, space and action characteristics that appear to be unique to the category of *task performance*. Objects being used for work are primarily being experienced in terms of some physical manipulation, accommodation or capacity, or involvement of measurable energy. In terms of spatial relationships, cognitive work maps are abstract understandings of patterns of efficient work sequence such as in the case of the experienced rock climbers. The way a systems engineer or a construction worker plans the most efficient route of moving materials around a warehouse or building site are clear exam-



Figure 5. Getting the kids ready (Photo by Sabino Canyon Arizona)

ples here. The actual movement or conduct of work among objects in a mapped space fills out the affordance characteristics. Here adjacency (distance) and movement using both object and spatial characteristics has the potential to come to one’s attention usually as fatigue or production inefficiency.

Park planners do not obviously intend for visitors to be frequently aware of doing work in managed landscapes. Nevertheless if a path is too steep, in its object characteristics, people will shift their attention to this experience and likely perceive it negatively. More spatially, if the path system is not efficiently laid out, people could become aware of expending too much energy to do the other things they want to do. If the adjacency between any two points of interest is too far, the actual movement might be more immediately attended to as work. In an architectural example of a large museum, Jeong & Lee (2006) identify physical fatigue along with other experiences.

Certainly one of the most frequent kinds of task performance visitors do in recreational landscapes is “using the restroom” (physical exercise will be discussed below as a non-visual aesthetic). How far one has to walk under various kinds of restroom situations (adjacency), and waiting for a

stall or urinal (capacity) of this work are different than the *wayfinding* affordance of “knowing where the restrooms are”. Smaller scale, more ergonomic or workstation affordances include various experiences using the toilets, stalls, diaper changing tables, washbasins, and more. As Aoki (2005) points out in the case of public park restrooms, the daily maintenance of these facilities is a major *task performance* demand for staff. Her article speaks as well to issues of personal safety in and around restrooms from social deviants in secluded and/or poorly lit areas of parks. Here one distinguishes two kinds of safety in landscape settings. We will wait until the category on *social territories* to include getting mugged or raped as negative affordances. In *task performance*, if paths, stairs or railings cause or allow people to fall, or if people slip on flat surfaces when wet, these are negative experiences in this category. Essentially “aesthetic” experiences like those done by



Figure 6. Going off the bridge (Photo by Sabino Canyon, Arizona)

Finnish children (Kytta 2002), including skateboarding, and activities like mountain biking or skiing among other populations, all include the high probability of some negative *task performance* event, i.e. “falling” or “crashing”, which are of concern to recreational users and managers. Jones & Graves (2000) evaluate skate board parks, but as we will see in the *social territories* section, the primary issues are social relationships between skate boarders and neighbors, rather than *task performance* safety.

What, however, would one call the safety issue of separating visitors from grizzlies at campgrounds, as in Creachbaum, et. al (1998)? Unlike the situation where muggings or rapes are being caused by social deviants at park restrooms and the lack of social, territorial surveillance we can't expect grizzlies to be on their good behavior when coming into contact with visitors, or to respect the surveillance of groups of visitors. It needs to be physically insured that the two users don't wander into each other's paths, or in the last resort, such as in zoos, impenetrable barriers need to be created between the two. These *task performance* strategies of safety also occur, of course, in separating some humans from others where the social control of public surveillance isn't effective.



Figure 7. “Keeping clear of the mountain lions” (Photo by Sabino Canyon, Arizona)

Preventing theft in visitor landscapes might rely on both kinds of affordances, one the *social territorial* public presence of others, or two the *task performance* of locking up valuable objects. In the latter case, one would want to understand the object (cutting a lock), spatial relationships (using a route that hid the presence of the thief), and movement (actually avoiding discovery during the event) characteristics of the affordance. One should distinguish using a clandestine route from a more general knowing where things are in *wayfinding*. Additional task performance aspects may also be important as the thief moves the goods, heavy or awkward as they might be, some distance in the act of getting away.

Some accessibility for the physically disabled is of course mandated in most landscape recreational settings. *Task performance* aspects of these affordances clearly focus on the way the physical chair, whether motorized or manually powered, works with paths and ramps as objects (see for example Longmuir, et. al. 2003). Are they too steep? Are they wide enough? Does the surface allow adequate traction? How can chairs fit into auditorium seating? Use of restrooms, of course, has more universal conditions. In terms of spatial structures, one must again distinguish work patterns from *wayfinding*. “Knowing where the accessibility route is” involves different kinds of information from “understanding the easiest route to manipulate the wheelchair or scoter”.

Adjacency and capacity attributes are always present when numbers of visitors arrive in or use their cars in relation to visitor landscapes. While “knowing where the parking lots are” is *wayfinding*, being able to find a spot (capacity) close by (adjacency) are clearly *task performance*. Certainly much is known about parking lot layout and capacities in public ordinances or guidelines. Yet McPerson's (2001) study of park-

ing in the city of Sacramento questions the accuracy of these conventions, citing an overbuilding of capacity, and even proportionally greater under use during peak periods. This report, however, is really about shade from trees in parking areas. Thus two categories of affordance are potentially at play here, one *task performance* (“having an adjacent space to park in”), the other *visual and non-visual aesthetics* (“enjoying the beauty of green areas”, or “keeping cool on a hot day”). These are separate affordance experiences within the larger gloss of “parking”, and might well be understood for their own realities.

Then of course is the whole efficiency and safety of traffic movement, pedestrian separation, and the like. Crankshaw (2001) outlines convenient parking locations and adjacent pedestrian route issues in historic downtowns, ideals not unrelated to those in New Urbanism. In landscape settings one does find occasional pieces like Widmer and Underwood’s study of recreational boat traffic and moorage patterns in busy Sydney Harbor (2004). Maneuvering boats under the conditions described may be even more demanding on affordance attention than auto driving in urban streets.

Finally, it seems true that *task performance* affordances are also relatively easy to document in their dimensions of object, space, and movement. People, it seems, are usually aware of and can describe their work experiences. But as discussed above, this does not mean that evaluators, designers and managers don’t often inappropriately lump specific task performance affordances in with other kinds of experience.

### SOCIAL TERRITORIES

The simplest kinds of social spaces in human behavior are not that different from territoriality in animals generally. Yet some researchers conflate these more immediate, occupation based social uses of space with symbolic meanings people

attach to their settings, e.g. using terms like “symbolic territories”. For present purposes these more complex symbolic phenomena are included in the final affordance category of *cultural expression*. In terms of the simplest, non-symbolic uses of space, one refers to writings on concepts like privacy, personal space, human territoriality, defensible space, or proxemics ideas developed in 70’s and 80’s environmental psychology. In design related practice, however, one needs to distill these often broad concepts down to more specific affordances or subcategories.

#### Dangerous space

The easiest to define is Oscar Newman’s “defensible space” (Newman 1996, Tijerino 1998), already introduced as surveillance control of deviant behavior in the restroom example above. Defensible space, when effective, eliminates the negative affordance or experience of being raped or mugged. In the best of all worlds, people will be largely unaware of defensible space and will be doing other things in the setting. The true affordance focus is really on “dangerous” space, or those experiences where people think about or actually are unfortunate participants in these events. Most current defensible space literature involving landscape spaces exists in urban settings. Freestone & Nichols (2003) describe the “reserve community space at the rear of residential lots” initially intended for recreation, but eventually perceived as dangerous through disuse and lack of maintenance. One interesting issue here is the distinction between perception and real activity of the negative affordance. If in fact people are not actually involved in deviant acts in the setting, is this really an “affordance”? Might not these images of possible affordances be better subsumed in the symbolic category of *cultural expression*. As discussed in the author’s evaluation of La Paz residence

hall on the University of Arizona campus (Doxtater 2005), a published example of New Urbanism in Katz (1994), much of these places' apparent sociability may function as a sort of fictive surveillance an opposite symbolism to Freestone & Nichol's example.

We know from criminal justice literature that a fair amount of crime happens in large recreational landscape settings such as national parks. Gilbert (2000) cites data from the year 1995 in the United States showing that 4,700 felonies and 31,000 misdemeanors occurred in our national parks, among which were 13 homicides, 34 rapes, and 164 aggravated assaults. This article, however, does not break out those crimes that may be due to *dangerous space*, rather than to non-environmentally facilitated situations between drinking buddies, feuding biker groups, marital partners, and the like.

#### Exclusive Space

Being exclusive or private forms an important variable in Bishop & Gimblett's (2000) analysis and simulation of certain kinds of recreation visitors in Sedona, and the Grand Canyon Arizona, Gimblett, et. al. (2001). The affordance is negative when a visitor's exclusivity is threatened by others. When actually alone or enjoying relative exclusivity in a setting, individuals or small social groups will be doing other things, many of which may not be very dependent upon the physical setting. Probably the visitor who seeks the most exclusion is the solitary wilderness hiker. In this case, the non-social affordances, once other people are avoided, may well be linked to *visual & non-visual aesthetics* or symbolic, ecological, or religious meanings as *cultural expression*.

At the opposite end of the spectrum of "avoiding other people or groups", and achieving seclusion, are negative affordances of "feeling crowded" in close



Figure 8. Being alone

quarters with other people. Most visitor experiences in landscapes are comparatively spacious in comparison to being in elevators or corridors in larger buildings or busy urban sidewalks. Nonetheless, situations might occur where people in busy nodes of focused experience, such as interpretative presentations, might become socially uncomfortable by the too close proximity of too many other people.

Reports of these negative affordances might commonly include "there are too many people", "you can't turn around", or of course "it's too crowded". Here again the gloss of "crowding" may conceal a finer discrimination of more specific affordance experience. If at a viewing platform at a scenic overlook some people cannot get an adequate view because they can't see over taller folks at the rail, then this is *task performance, cultural expression or visual & non-visual aesthetics*. The design solution is not necessarily to thin out the numbers of people at the overlook at any one time, but to devise a way for viewing from elevated positions away from the rail. Even though users might report the overlook problem as "being too crowded" the experience isn't really social exclusion or spacing, but "being able to see the view".

#### Ranked Space

In addition to being exclusive, some ani-



Figure 9. Its too crowded (Photo by Sabino Canyon, Arizona)

mals and certainly humans are also capable of using simple territorial space to socially distinguish members along dominant and subordinate scales. In Calhoun’s (1962) classic experiment with rats, a limited rectangular nesting box created dominant male rats in the four corners, while subordinate others could not nest or mate. They became socially deviant. In contemporary human settings a not dissimilar ranking frequently occurs in those intense social settings called “offices” (Mazumdar 1992, Doxtater 1994:338). Most landscape settings, whether urban or national parks, may be significantly valued as places where ranking is much less likely to occur a refuge from negative territoriality in urban buildings and layouts, e.g. in Shin et. al.’s (2005) evaluation of “psychosocial” effects of urban forest park use in South Korea. In this consideration, unlike the city, powerful people cannot control areas of space, most use is relatively transient, and even desired exclusivity often for socializing in small family or friendship groups is generally available on a first come, first serve basis.

It is perhaps this sense of an egalitarian right to be exclusive that most bothers hikers when they have to step off the trail for pack trains of horses or mules. Watson and Niccolucci (1994) describe hiker’s feelings of lower status in these affordance

experiences of “getting off the trail for stock groups”, a clear sense of social ranking. Landscape recreation literature seems almost nonexistent, however, about possible ranking in designated spaces of parking lots, more expensive lodging within the same facility, more expensive seats in auditoria events or status restaurants along side of fast food. Nevertheless, some of these socially differentiating negative or positive affordances probably exist for visitors, e.g. “we can’t afford that”, or “we don’t belong there”.

Strategies of moving through the landscape involve considerations of social effects as the user moves in either dominant or subordinate directions of the spatial structure. People of lower status will be expected to move in the direction of their superiors, e.g. when the boss wants to see an employee, the employee usually goes to the boss’s office. The primary interest in less socially structured visitor experiences should not keep evaluators, designers, and simulators from attending to the way employees or staff use the physical setting to socially influence. These things are always more important in work groups where people have to co-exist with each other in the same space often over considerable periods of time.

### Spontaneous Space

The best research based example of these



Figure 10. A lot of money in those R.V.s. (Photo by Lauren Hillquist)

kinds of experiences is widely seen in Whyte's film and book on the "public life of small urban spaces" (1980). Even though some evidence of exclusion occurs, e.g. in sitting to the back of a public space under trees (Appleton's "prospect and refuge"), people are clearly interested in seeing and being seen in this modern "I-thou" or "communitas" condition (Turner 1974). Some of the social things that people do are: "watching people", "talking with friends", "eating in an active outside place", "watching street performances", "running into friends", or "necking in public". Of these, "talking with friends" as an affordance might have little to do with the physical setting, in contrast with the others. Certainly Space Syntax methodology has paved the way in their analyses of how people move through public space, assembling in greater densities here or there. As useful as these more abstract contrasts to structured space are in predicting the general success of a design, however, it remains necessary to more fully define experiences in terms of specific affordances like those detailed by Whyte.

One good literature example of the tension between spontaneous and structured social space occurs in the case of skateboarding (Jones & Graves 2000). Of the six case studies the authors evaluate, one



Figure 11. Talking with friends (Photo by Sabino Canyon, Arizona)

appears to be the ideal and is specifically compared to Whyte's work. The case is a park under a bridge in Portland, Oregon, where skateboarding can occur in a more integrated social context, not unlike some very active inner city streets. The other sites studied create exclusive spaces for skateboarding away from publicly active areas. Certainly the primary affordance for skateboarders is a kinesthetic (*visual & non-visual aesthetic*) with the occasional negative *task performance* experience of being physically injured. Nonetheless, at certain times boarders will be quite aware of situational, territorial issues of social exclusion from or inclusion in spontaneous settings, e.g. "being ticketed for skateboarding in illegal areas", or "being able to hang out with other skateboarders in public places".

As in the other social, territorial situations described above, other people will be the primary "objects" in describing affordances of spontaneous space. Physical appearance, dress, behavior, contribute an endless variety of interesting people we are likely to watch, think about, or perhaps engage in conversation with in active public spaces. But what about the physical setting, particularly Whyte's ingredients for a successful plaza, i.e. sittable space, adjacency to street, water and trees for shade? One could look at each of these from other category points of view. Sitting and adjacency to the street could be *task performance* as well; water and trees are *visual and non-visual aesthetics*. Yet much of the time these must be background affordances, with the focused attention on spontaneous socializing.

Only Whyte's term of "triangulation" an admittedly vague notion about positioning between most interesting people or other behavioral events, such as street artists begins to capture spatial aspects of the setting. To a large extent, if the setting is safe, with large numbers of people, the

object characteristics of the physical setting will be less interesting or mostly background. Spatial mapping of where we are likely to find such numbers of people seems a likely flip side to exclusive space, i.e. where one is unlikely to run in to people. Strategies for movement may also involve times when numbers of people are present at certain locations.

### CULTURAL EXPRESSION

The reader at this point may perceive a certain scale of importance in the order of kinds of categorical affordances presented herein. We have yet to cover the two most ostensibly important experiences visitors have in recreational landscapes. First, people are likely to attach shared, symbolic meaning to landscapes in an essentially extrinsic manner somewhat independent of physical form. Cultural meanings, aside from learned task-performance ways of doing things, will be social in purpose, including the full range of belief religious, educational, ethical, etc. Intrinsically, however, landscape form may hold more universal interests not dedicated to any of the other more purposeful affordance categories, but to the pure delights of the senses described by Stolnitz in his philosophy of aesthetics (1992).

The term *cultural expression* includes numerous specific experiences that can be religious, commemorative, or educational. It is true that one cannot expect to map all the personal, idiosyncratic associations today’s diverse individuals attach to visited landscapes. In traditional cultures, however, most symbolic meanings, ritual frameworks of space, and ceremonial movement in the landscape were shared and therefore more available to ethnographic inquiry. Some of this meaning still exists in Native American groups living in a larger landscape that for most others has become more recreational than religious. Applied anthropologists such as Stoffel,



Figure 12. Pilgrimage to the mountain shrine (Source: [www.sacredsites.com](http://www.sacredsites.com)).

Zedeno & Halmo (2001) provide an excellent example of how to record what objects mean, their location in space, and movements in the larger landscape. They rely upon onsite information from native informants, e.g. with the Paiute Tribe in areas around Las Vegas. Spiritual “power” from these culturally defined natural landscapes still provides the basis for healing and social ceremonies such as rites of passage. Most managed landscapes, however, are not in the business of providing religious experiences, at least as shared by any institutionalized group. One does find, however, designed commemorative experiences in the landscape with spiritual overtones, many influenced in one way or another by the precedent of the Viet Nam Memorial. One of the best comprehensive overviews of these kinds of landscapes can be found in Wasserman (1998) who identifies several kinds of experience: the

“sacred” (“making contact with spirits” in affordance terms), “memory” evocations of particular people or events, “mourning”, “reflection”, “healing”, “ritual” and “collective action”. This study is more overview than applied methodology.

In spite of being one of the most significant and influential design projects in decades, no one has documented what people actually do at the Viet Nam Memorial. True, several articles, e.g. Griswold (1986), speak of normative symbolic, poetic meanings of the physical forms in their mall context, particularly the contrast with the rhetorical architecture of buildings like the Lincoln Monument. But most visitors will know more specifically what they and others actually do: “looking up a name”, “figuring out the time sequences”, “thinking about a lost love one”, “leaving a personal object”, “being in a grave”, “watching other people’s emotions”, “seeing one’s face reflected along with the names”, “remembering a particular event”, “gathering on the lawn as part of a visiting group” (e.g. biker groups on Memorial Day). Spatial movements as well might be mapped, although there appears to be little formal ritual-like framework to these affordances, as in more traditional settings or churches.

Even though published studies of visitor attention or interests in museums or zoos are few and far between, many interpretative landscape organizations will undoubtedly have conducted some sort of internal evaluation of signage, exhibit appeal and the like. To what degree is this information dependent on exit surveys with general questions of preference rather than real time data about what a person is actually doing at particular points along an interpretative sequence? How possible is it to map these actual experiences of *cultural expression* among the other things people do while these settings? How specific can one practically get? In the case of historical or archaeological settings, for

example, the National Register’s criteria for evaluation include “association to events or persons important in the past”, “properties significant as representatives of the manmade expression of culture or technology”, or “properties significant for their ability to yield important information about prehistory or history” (National Register Bulletin nd). But while we might relatively easily evaluate the presence of these contents in the physical setting, the affordance approach requires also knowing if and when people attend to them. In addition to ideally knowing which object content people actually attended to and internalized to some degree, we also must consider the unique information that spatial structure and movement can add to affordances. The most obvious of these will be “time lines” as an associational, educational device, again for history, archaeology, geology, ecology, etc.

An example of a more rhetorical (object based), less highly structured cultural space as visitor landscape can be found in Northern Italy where a local group was determined to attract tourists by creating a map of things to do and see in their landscape region Grasseni (2004). While, again, the source of information is not the actual affordances the tourists eventually had, nevertheless, the knowledge about land use, local history, identity, and conservation is quite specific and seems to capture *their* experiences as remembered or even reconstituted. Grasseni’s article is also interesting in her effort to reconcile more initial, holistic, phenomenological impressions of landscape, that are difficult to specifically define, with the “skilled vision” of locals which at times approaches the specificity of affordances. It should also be noted that as an anthropologist, Grasseni measures primarily social meanings and experiences. She speaks of a “reterritorialization”, or an attempt to add symbols to a defined or exclusive space (the local landscape) which



Figure 13. Reflecting on the Korean War (Washington, D. C.)

creates tourism identity in relationship to the outside world.

At the much smaller landscape scale of front or back yards in Phoenix, Larsen & Harlan (2006) associate four different kinds of landscape styles with social status and Goffman’s presentation of self. Having “lawn” is preferred by lower income people, “desert” connects with middle income, and “desert” and “oasis” associates with upper income (even though it is the same house plan and elevation). Here front yards seem to have much less to do with intrinsic *visual* or *non-visual aesthetics* than the cultural or educational awareness that “desert” is ecologically preferred over “lawn”. This doesn’t of course mean that the front yards cannot at other times have other affordance properties in other categories. A similar discussion of front yard status in New York, this time with racial overtones, can be found in Duncan and Duncan (2003). While these examples are from private residences, not dissimilar affordance experiences might well be possible with stylistic aspects of landscape or built form in visitor landscapes, where they will usually be associated with some sort of spatial exclusivity or ranking.

These cultural views of nominally *visually* and *non-visually aesthetic* landscapes again raises the question of which may be more important as affordances. Perhaps the most documented example of this

question is Gobster & Hull’s (2000) anthology dedicated to the controversy over proposed restoration of forest lands in the Chicago region. Should governmental agencies restore the lands to their aboriginal prairie conditions, or leave the more park-like character created by many imported trees? The volume speaks most clearly about the propensity of culture to interpret particularly social importance of landscapes, perhaps both pristine and park-like, at least at the level of discourse. No theoretical distinction between *cultural expression* (extrinsic) and *visual and non-visual aesthetics* (intrinsic) surfaces.

#### VISUAL AND NON-VISUAL AESTHETICS

Finally, we define those interesting moments of our sensory experiences when some intrinsic aspect of the physical setting captures our attention, away, as it were, from all the other obviously “useful” things we do (Terry Daniels: class presentation), some dependent upon the setting, some not. In visitor landscapes, when will people report “watching a sunset” or “taking a picture of a rugged canyon”, (visual); “smelling the flowers” (olfactory); “seeking shade on a hot day” (thermal); “playing in the water” (tactile); or “riding a big wave on a surf board” (kinesthetic)?

The term “visual aesthetics” comes primarily from a considerable literature



Figure 14. Learning about Mt. St. Helens”. (Photo courtesy: USDA)

assessing human experiences of natural landscapes, e.g. Taylor, et. al. (1986), Ulrich (1983), Kaplan et. al. (1998), Clay & Daniel (2000). These evaluations run the range from precise calculations of the scenic in unique natural features to more holistic, phenomenological feelings about usually larger scale perceptions of “being” in a landscape. Such studies are typically dependent upon preferences subjects give to photographs of various kinds of natural form. Some recent work extends this kind of process using film and movement (Heft & Nassar 2000). At the more specific end of the evaluation spectrum, where perceptual details of natural objects are clearly identified, photo judging done by subjects might actually correspond to reportable affordance experiences in the field. Nevertheless, even here too, there exists a holistic assumption about being interested in relatively large, diverse swatches of settings framed by photographs. Because subjects are not typically asked to imagine “doing”



Figure 15. Looking at the Grand Canyon.  
(Photo by Tina Mattsson)

something in the photographed setting, it is not clear, from an affordance point of view, what preferences really mean. When subjects prefer photos with water in them, or preferentially distinguish different kinds of landscape character or types but have no notion of actually doing anything does this suggest that these meanings are attended to in some sort of less conscious, pre-affordance process?

Many architects very much believe that not dissimilar kinds of holistic meanings are the primary aesthetic force operating separate from or in spite of all of the other more measurable things the built setting can do (*wayfinding, task-performance, social territories, cultural expression*). Bachelard (1969) and Tzonis & Lefaivre (1986) speak of poetic structures of ordinary dwellings or Greek temples, form not at all traceable to any symbolic, socio-cultural intent. Benedikt (1991) uses the term “archetype”, not unlike Bachelard, in describing fundamental formal and volumetric attributes that create “difference”, *à la* Derrida, in the work of famous architects like Frank Lloyd Wright or Louis Kahn. Peter Smith attempts to associate certain formal properties of silhouette, mass, pattern and the like to different parts of the human brain (1979). Not unrelated to the mentioned work that measures preferences of moving images or film, Weber (1995) tracks the movement of the eye over a photograph in an attempt to determine aesthetic preferences. Again, however, subjects are not “doing” anything, presumably just attending more subconsciously to visual form.

Our present question asks to what extent are *visual and non-visual* experiences more reportable, and conscious perhaps, like the affordances of other categories. This issue emerges in Palmer’s (2000) recent discussion of positivist vs. post-positivist (phenomenological) evaluation of visible landscape quality. After testing differences between denotative (fact-like) and



Figure 16. I wonder what is in there

connotative (subjective) qualities of evaluation processes, his conclusion suggests the possibility that “photographs are inadequate to effectively trigger our information-seeking instincts”, and that “more attention needs to be paid to how movement through the landscape influences both landscape preference and information-seeking preference” (ibid: 175). In spite of the ambiguity created by the term “instincts”, nevertheless, he seems to point to more affordance oriented approaches in the tricky process of determining how often people really “do” visual and non-visual aesthetics.

In addition to the frequency issue, in context with all the other setting related and setting unrelated things people do, there appears to be clear differences in aesthetic preferences between age groups. Returning to Kytta’s work with children (2002), we see a preponderance of interests in the kinesthetic, e.g. skipping, jumping, swinging, skate-boarding, etc. The tactile as well may afford more to children. We all know how kids love to play in sand and water. Some indication of age differences resulted in a study of photographs taken by the full age range of visitors to a recreational forest outside of Osaka, Japan (Oko & Fukamachi 2006). Part affordance, part phenomenology, the photographs were ultimately organized into categories that emphasized “object”, “event”, or “place”.

One conclusion was that the youngest visitors were more interested in objects like flowers or waterfalls, while the more solitary oldest participants had a keener view for “total scenery” with a wider interest in nature. One assumes that the latter is part of more passive visual affordance experiences while waterfalls, at least, might well involve the tactile and even kinesthetic. The color of flowers, on the other hand, might well be interesting to all ages, even though their aromas might be best sensed by younger noses.

The degree to which the Japanese study captures any specifically aesthetic spatial structure in the experiences is unclear. Their “events” and “places” seem more node-like, in addition to “objects”, and offer little information about possible aesthetic enhancement from structured spatial relationships between them. This raises the interesting question about whether *visual & non-visual aesthetic* affordances, because they tend to exist at a more perceptual than cognitive level perhaps, frequently do not string together in space and movement as a means of enhancement. Certainly one can quickly imagine a skier thinking about the spatial strategy of a run, one that would include object or nodal highlights of imagined high speeds, turns or jumps. But the question is whether the spatial structure of the run actually contributes to some heightened kinesthetic



Figure 17. Like frozen music (Photo by Kelly Drawn)

experience, beyond a simple orientation between somewhat disconnected focal events.

#### CATEGORICAL COMPETITION, MEDIA, AND FUTURE METHODOLOGY

Hopefully the reader will be left with a less holistic, less normative view of possible experiences of visitors in recreational settings. Persuasive assumptions of an overwhelming complexity of these large-scaled settings are first diminished by the likelihood that for some appreciable time in these settings, visitors are doing things that are not that dependent upon the physical setting. Most important, however, is the need to record, design and evaluate in terms of very specific affordances, each with its psychologically unique, practically describable characteristics of object, space and movement. Within this list of affordances, then, there appear to be unique clusters that may tend to be understood by the visitor as related or strung together across the setting: *wayfinding*, *task-performance*, *social territories*, *cultural expression*, and *visual and non-visual aesthetics*. We do not, either as visitors or as practitioners, need to understand these potential layers of experience as any whole. While any final design is a single form that ideally will accommodate multiple experiences strung together categorically perhaps the best definition of "place" complexity can be reduced by understanding each layer. This does not, however, mean that visitors will be in agreement about which kinds of experiences are most important to them personally. But ideally, most visitor experiences can be maximized with some ultimate design solution.

We must avoid terminological glosses of setting behavior that may hide multiple affordances in different categories. Many examples can be found where research, case studies or other reports focus on a problem in the physical setting without

clearly identifying the actual affordance meaning. In Lynn & Brown (2003), the effects of recreational "trail erosion, extension and widening, muddiness, tree and plant damage, fire rings and litter" were measured in terms of "solitude, remoteness, naturalness, and artificialism". The focus of the study is largely on scenic or *visual aesthetics*, which here includes solitude in a more intrinsic less social sense. Yet the physical aspects of the trails might well involve *task-performance* ("getting wet" or "slipping"), *social territories* ("feeling crowded"), and *cultural expression* ("looking down on people that vandalize or don't adequately maintain their settings").

The present paper advocates a more consistent specificity and organization of these experiences in applied processes. As a more disciplinary basis develops, comparative research may lead to a much greater theoretical understanding of how categorical affordances trade-off or compete with each other, within a particular setting or between settings. An interesting example in this direction compares the experiences of people in a naturalistic Olmstead designed suburb with those in a more conventional gridded layout (Crow, et. al. 2005). Even though the perceived attributes by inhabitants are not really specifically stated at the level of affordances or categories, nevertheless, it is reported that the Olmstead people value their naturalness, while those living in the grid hold function and wayfinding as most important. Thus we have the possibility that naturalness, either for visual and *non-visual aesthetics* or *cultural expression*, may diminish *wayfinding* and *task-performance*. What are the consequences of these trade-offs?

One final example of competition between affordances can be found in the film *In the Light of Reverence* (McLeod 2001). One of its three case studies compares the experiences and values of two groups who differently use the remarkable natural fea-

ture Devil’s Tower in Eastern Wyoming. The Native American Lakota use it as part of important ceremonial or *culturally expressive* experiences. These can be described in terms of key symbols, spatial structure in the landscape, and ritual movement. Then there are the non-native rock climbers who satisfy their kinesthetic (*non-visual aesthetic*) needs by focusing on hand hold features, routes up a particular face, and of course the timing or actual movement of the climb. In this case each of the two groups sees the activities of the other as an infringement on their particular affordance orientation. The National Park Service attempts to solve the conflict by asking climbers to voluntarily stay off the feature during major native ceremonial times of the year. While it is unlikely that these two groups would ever be comfortable with the concept of alternating affordance for a particular landscape feature or setting nevertheless in less politicized contexts visitors may well understand that this is the typical way we use our physical environments.

### Media

The research question of how media, particularly film and printed brochures, can influence our actual affordance experiences in real physical settings is relatively unexplored. We do find comparisons of visual representations of natural settings with the perception and preference for the real thing (Daniel & Meitner 2001). But again, these efforts rely on views of scenic settings shown to subjects without affordance contexts of actually “doing” something. More suggestive of specific affordances were the pictures taken by visitors to the Japanese forest park mentioned previously (Oku & Fukamachi 2006). But neither of these examples is used in the manner of numerous film and printed promotions illustrating potential affordances in some to-be-visited landscape, such as when the Australian

Tourist Commission sent out a call for photographs of the “real Australia” by ordinary citizens (Evans 2003). The photos were to be used in an advertising campaign to attract more tourists from abroad. Presumably some of these photos will document a specific affordance in a physical setting that will be previewed by a visitor prior to his or her actual re-creation of the experience on site.

Seeing potential affordances in films of brochures, particularly for *culturally expressive* and *visual-non-visual* experiences, are quite common at least for the more popular national and international recreational settings. Many such landscapes have representations of potential experiences as an introduction when visitors first arrive on the site. These and more distant previews must have an effect in planning one’s experiences in the settings, and perhaps even heightening them when they actually occur. We return to the question of whether representation of potential *visual aesthetics* in effect casts a *culturally expressive* definition on the experience, complete with felt social obligations to participate in the affordance. Does representing things that ideally should be unrepresented, intrinsic and inherent, diminish any truly aesthetic experience?

It is also possible that some portion of tourist experiences are staged, either by visitors themselves or setting managers, in part to be captured in photography and film and to be post-viewed after the visit. Iles (2006) describes this “performing tourism” as a central experience in visiting the WWI battlefields of the Western Front. How does this staging of cultural expressive affordances depart from nominally self-initiated affordance seeking in recreational or educational landscapes? At an extreme, guided tours provide the ultimate in prestructuring affordances in visitor landscapes, in most cases using verbal communication by docents as the amplify-

ing medium. How does one compare the effectiveness of these experiences with those “discovered” more by visitors themselves? How effectively will cell phones and GPS identify and structure affordance experiences?

As in the Vietnam Veterans Memorial, as well as the Western Front battlefields, visitors to some “pilgrimage” settings may bring a great deal of previous, media-based experience to the actual memorial or historical site. The relationship between pervasive mass-media “myth” and real setting experience is explored by Dickinson, et. al. (2005) in the setting of the Buffalo Bill Museum in Cody Wyoming. According to the authors, the physical affordances reify the images of masculinity and Whiteness of the myth, “carnivalizing” the violent struggle between Anglo Americans and Indians. They imply, alternatively, that a constructive cognitive dissonance might have been created in the physical setting by confronting long held biases of media.

Research is also needed to determine if film and photography can adequately capture or preview all characteristics of affordances, in all categories. Photography is certainly biased toward perceptions of objects or images, and lacks information about spatial structures and movement. How adequately then, does film represent experienced cognitive space in its different categories of affordance? We know that film does create a structure that connects various scenes, yet these images really are not mappable to any real space as more normally cognized. And if film space is not real space, as it were, how similar are its impressions of movement and action to the strategizing and timing that normally depends on cognitive mapping of real settings?

#### Future Methodology

Most applications of categories of affordances in visitor landscapes will begin

with a close evaluation of what people are actual doing in the setting. Instead of more open ended methods of gathering information about experiences, one can envision separate mapping of the five different kinds of things people do. Considering individual (demographic) differences between kinds of visitors, methods must enable the researcher to capture information about object, space and movement relevant to each category of experience. Once this layered baseline data is gathered, simulation models can be developed by which to manage new pre-design and design schemes which will alter the physical setting. The author is fully confident from experience in architectural post occupancy evaluation and design that good category information can also be collected from recreational landscape visitors using a combination of spatial tracking, reporting devices, and observation.

At present, category information in architectural processes has been used primarily to develop a manageable list of things people do in a particular kind of building, usually as part of a post occupation evaluation (e.g. in the evaluation web site linked to Doxtater 2005). Such information can be useful in maintaining a dialogue with users and professionals during pre-design (programming) and design processes. This potential, however, has yet to be integrated into high-end computer modeling or simulation of architectural settings, where typically viewers “fly though” presentations without really “doing” anything. The development of simulation models of experience has occurred first in landscape oriented adjacent fields. It is here that ideas about categories of experience might be expected to bear first fruits as part of applied simulation to make better decisions about changes in these physical settings.

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