

# THE NATURE OF THE VIEW FROM HOME Psychological Benefits

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**ABSTRACT:** Depending on what is in the view, looking out the window may provide numerous opportunities for restoration. Unlike other restorative opportunities, however, window viewing is more frequent and for brief moments at a time. The setting is also experienced from afar rather than while being in it. A study conducted at six low-rise apartment communities, using a survey with both verbal and visual material, provides considerable support for the premise that having natural elements or settings in the view from the window contributes substantially to residents' satisfaction with their neighborhood and with diverse aspects of their sense of well-being. Views of built elements, by contrast, affected satisfaction but not well-being. Views of the sky and weather did not have a substantial effect on either outcome. The potential of nature content in the view from home to contribute so significantly to satisfaction and well-being suggests clear action mandates.

**A windowless environment** can provide excellent light, good air quality, and interesting things to look at, yet it is often not a preferred environment. The

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attraction of windows must then extend beyond their ability to provide these qualities. In fact, even on cloudy days with the windows closed and with views that are quite ordinary, a windowed place is preferred by many people. Does the effect of windows go beyond the fact that people like them? Are there other benefits that windows afford?

A premise of this article is that the special status of windows is related to the fact that views out the window readily draw one's attention. These pulls of attention in turn lead to very brief interludes that can provide a respite from the immediate tasks and demands, thus providing a micro-restorative experience. Based on previous work (e.g., Tennessen & Cimprich, 1995), it is reasonable to assume that the restorative qualities of such brief interludes depend not only on the presence of a view but their content as well. Because each viewing occasion may be short-lived, the restorative effects of window views presumably derive from the repeated opportunities. The accumulation of such momentary pauses might reduce the intensity or alter the time course of the costs associated with deficits in directed attention.

Attention restoration theory (R. Kaplan & Kaplan, 1989; S. Kaplan, 1995) focuses on directed attention, its fatigue, and ways to achieve restoration. Directed attention involves effort. The task one is pursuing may in itself require effort; in addition, confusion and distractions that make it more difficult to pursue the task may extract further effort. Simon (1978) pointed out that in the modern world, attention is a finite resource; this is particularly true of directed attention, where the effort leads to mental fatigue. We have argued that the recovery, or restoration, process is more likely to occur in settings that do not require great amounts of directed attention. Situations or settings that are inherently interesting draw on a different kind of attention. Here, there is minimal effort required because of the fascination of the setting. Natural environments are not the only contexts that permit such effortless attention; they have, however, been shown to be strong in the qualities that lead to mental restoration (Herzog, Black, Fountaine, & Knotts, 1997).

The emphasis of prior research on restoration has been on experiences in outdoor natural settings that range considerably in duration but are distinctly longer than the very brief interludes that characterize looking out the window (e.g., Hartig, Böök, Garvill, Olsson, & Gärling, 1996; Hartig, Mang, &

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Evans, 1991). The emphasis of the present article, by contrast, is on people's window views from home. More specifically, the focus is on the content of these views, the degree to which residents' views are of preferred settings, and the association of view contents with well-being and residential satisfaction. Examination of the role of the view from home is hardly a trivial issue. For many individuals, extended restorative experiences may be few and far between. Micro-restorative experiences afforded by the view from home, however, may be far more attainable.

#### PSYCHOLOGICAL BENEFITS OF WINDOWS

There is ample anecdotal support and a growing empirical literature substantiating that windows are favored in diverse settings, including the workplace, schools, hospitals, prisons, and residential contexts. In the business world, for example, Finnegan and Solomon (1981) reported that job satisfaction and work attitudes were significantly related to the presence of windows for their sample of 123 office workers and health care providers. Others too report a variety of benefits and preferences related to a window in the workplace (e.g., Biner, Butler, Lovegrove, & Burns, 1993; Boubekri, Hulliv, & Boyer, 1991; Stone, 1998). Not surprisingly, then, windows have served as a promotion perk, with corner offices higher on the promotion ladder. In a study of faculty members at two universities, Farrenkopf and Roth (1980) found those at higher academic ranks had significantly more windows.

A key question is whether it is the presence of the window in and of itself that is favored or whether the content of the window view is decisive for preference. Collins's (1975) extensive literature survey suggests that content per se may not be a major factor. She pointed out that the desire for a view need not be of a "beautiful, pastoral" scene (p. 38). In fact, she suggested that "even a brick wall six feet away outside a window is much preferable to a brick wall at the same distance inside the same room" (p. 39). In other words, the preference for windows is not strongly related to the informational content of the view.

Yet several studies completed more recently point to the importance of view content. A series of studies carried out in the context of hospitals and prisons has demonstrated the role of view content in the effectiveness of windows in speeding recovery or reducing the needs for health care services (Moore, 1981; Ulrich, 1984; Verderber, 1986; West, 1986). Moore's (1981) study, for example, found that prisoners whose cells faced the internal courtyard used health care services significantly more often than prisoners with cells facing the farm fields beyond the facility.

In the context of the workplace, Leather, Pyrgas, Beale, and Lawrence (1998) found that sunlight penetration had significant effects on job satisfaction, intention to quit, and general well-being. By contrast, the view of natural elements "was found to buffer negative impacts of job stress on intention to quit and to have a similar, albeit marginal, effect on general well being" (p. 739). The study was carried out during "hot and sunny" summer days in southern Europe, with substantial variation in sunlight penetration for different participants. The authors indicated that "many employees had few, if any, [natural] elements in [their] view" (p. 757) and did not report whether view content differed for the white- and blue-collar workers.

Two studies showing strong links to view content in the workplace were described in R. Kaplan (1993). The first study found that those with nature views reported fewer ailments in the past 6 months and showed greater job satisfaction. In the other study, involving 615 employees in office jobs, those with a view of nature felt less frustrated and more patient, found their job more challenging, expressed greater enthusiasm for it, and reported higher life satisfaction and overall health.

In the residential context, the role of the view from the window is reflected in economic indicators such as rent, price of housing, and even hotel rate structures. The view is also likely to be mentioned as an amenity in advertisements for both temporary and permanent housing.

Tennessen and Cimprich (1995) explored the content of the window view in the residential context of dormitories. They found that students who have natural views show greater attentional capacity, using both performance and self-report measures.

Our previous research (e.g., R. Kaplan, 1983; Talbot & Kaplan, 1991) showed greater satisfaction with the neighborhood when residents of apartment complexes could look out onto more natural rather than more built settings. At the same time, however, satisfaction was far greater when residents could see even a few trees than when their view was of large open spaces.

There is thus empirical evidence in a variety of settings to support the strong intuitive belief that the presence of windows makes a substantial difference to people. Furthermore, there is evidence that the ability to see things that are natural is particularly important in producing the window effect.

Conceivably, these studies have less to do with a window effect than a nature effect. By now, there is substantial support for nature settings as preferred as well as restorative (Hartig & Evans, 1993; R. Kaplan & Kaplan, 1989). A nature effect is also supported by Heerwagen and Orians's (1986) findings of substantially greater use of nature compensations (e.g., pictures, décor, and indoor plants) in windowless offices. In our study of office

employees, however, we did not find that indoor nature compensations had comparable effects to window views of natural elements. What is it then about seeing nature through a window that makes it such a prized situation?

#### WINDOWS AS MICRO-RESTORATIVE SETTINGS

As mentioned earlier, settings that have fascination are likely to be more restorative; by drawing on effortless attention, they permit recovery from directed attention fatigue. Attention restoration theory further identifies being away, extent, and compatibility as factors contributing to restoration and explicates the role of natural settings in achieving these factors (S. Kaplan, 1995, 2001 [this issue]). In the context of the window view, these same factors might be achieved although necessarily for very brief instances. The glimpse of the world beyond afforded by the window view can quickly transport one elsewhere in mind if not in body. It need not take long for the mind to wander to distant places and thoughts.

There are some other properties of windows that may play a role in achieving micro-restorative outcomes. For example, windows provide a safe vantage; protected from the elements and many other potential dangers, they offer refuge (Appleton, 1975) while affording prospect in permitting exploration beyond the immediate setting. It is hardly surprising that the homes of the more affluent often have big windows and views of highly preferred settings. From the safety of one's home, scary things are less scary, allowing for fascination without danger.

Appleton's (1975) notion of prospect refers to an "unimpeded opportunity to see" (p. 73). Views from tall buildings are often sought for their ability to provide such prospects (e.g., the Seattle Space Needle and many other edifices where people are willing to wait in line for an opportunity to take the elevator for the view from the top). Seeing into the distance is compelling both in the physical setting and as a cognitive metaphor. At the same time, the perspective afforded from some window views can give the sense of looking at a whole little world—much as the view from the sky miniaturizes the world beneath. Even modest heights can provide opportunities for seeing into the distance and the sense of the miniature. In fact, even a window view of a small garden patch can achieve these qualities of extent.

It might also be the case that the sense of extent is increased by the frame the window provides for the view. Similar to pictures on the wall, the views from the window are bounded. The framing quality of windows is often augmented by dividing the window into smaller panels or by smaller windows that provide a picturelike view. Alexander, Ishikawa, and Silverstein (1977)

also emphasized the power of a “restrained view” (i.e., their pattern called *Zen view*), offering only a glimpse that encourages the imagination to generate the rest.

As potential micro-restorative opportunities, windows have some other noteworthy characteristics. There is virtually no overhead in time or effort in obtaining the benefit of the view. Perhaps a curtain needs to be opened or a blind raised, but one need not even put on one’s shoes to begin the activity. Neither does one have to contend with traffic or other forces that might reduce the effect of a restful interlude before it is completed. The immediacy of the view and the minimal transition time make it possible to accumulate many brief respites.

Thus, there are a variety of reasons that suggest that windows can afford micro-restorative experiences. Having a window and a view that is satisfying can provide many moments of fascination, thus reducing the effects of mental fatigue. Window viewing can be frequent; vacations come but rarely. The many and frequent interludes can forestall the need for a longer break, and although they are of very short duration, they may reduce mental fatigue before it becomes a serious problem.

#### STUDY OVERVIEW

The study presented in the next section focuses on the content of the view from home and its associations with psychological well-being and residential satisfaction. View contents, including both vegetation and built elements, were measured using verbal items and visual materials. The visual images made it possible to sample a wide range of settings that would be difficult to distinguish verbally, providing a fuller sense of the content of the window view. The photographs also made it easier to inquire about how much the resident likes the views from home. A third content domain, related to information about the weather, was also tapped by verbal items.

Because there is substantial documentation that nature plays an important role in preference and well-being, the study inquired not only about nature content in the view from home but also about residents’ nearby nature-based activities.

The effect of the content of the window view was assessed in terms of dimensions of well-being that focused on the conceptual concomitants of mental fatigue (e.g., being forgetful and distracted) and on the positive aspects presumed related to restoration (e.g., feeling relaxed and effective). A more restored state is likely to express itself in greater feelings of competence and energy. It is adaptive for people to feel better about themselves when they are in such a state. In addition to the well-being domain, the study included

measures of satisfaction with the residential environment. Although the content of the view and involvement in nature-based activities would be expected to affect residents' satisfaction, there is no a priori link between the satisfaction domain and the well-being dimensions.

Many factors other than window views and nature-related activities are likely to influence people's sense of functioning effectively and feeling restored. To rule out some of these potential influences, participants were asked about their perception of demands imposed on them both in the home and nonhome contexts.

The study thus focuses on the psychological benefits of the view from the window. Nature views are expected to provide micro-restorative opportunities that in turn would lead to greater feelings of effectiveness and tranquility. Nature in the view would also be expected to increase residents' satisfaction with their surroundings. Views of the built environment may be detrimental with respect to these outcomes; however, prior research in the work context (R. Kaplan, 1993) found that the built environment did not play a significant role in undermining micro-restoration. Although the outcome measures do not provide a complete understanding of the potential effects of the view from the window, finding links between the content of the view and residents' well-being can have important implications both theoretical and practical. The inclusion in the study of different ways to assess the content of the view and concern to sample broadly both the natural and built elements in the view offer the possibility of a richer understanding of micro-restorative settings. The study thus extends the purview of restoration research by focusing on short-duration exposures to nearby natural settings and asking whether these have a relationship to residential satisfaction and to residents' well-being.

## METHOD

### STUDY SITES AND PARTICIPANTS

Study participants were residents at six apartment communities in Ann Arbor, Michigan. Views from apartments at each site included paved areas, adjacent buildings, parked cars, and other built elements. An essential aspect of site selection, however, was the variation in the types of available natural elements. Three of the communities are a short walk from a park, one has a stream flowing through it that is visible to almost all apartments, four have extensive landscaping within the interior areas, and one has vistas of woods and grassy rolling hills. Residents have no role in the landscaping decisions

or maintenance of their communities. The sites were selected from among those with low to low-medium rent for the area (one-bedroom apartments below \$500). Buildings taller than three stories were excluded as were subsidized co-ops and communities for elderly. To the extent possible, based largely on on-site observations, an effort was made to address ethnic diversity in site selection; however, no data were available on ethnicity, and apartment managers were reluctant to discuss it. The six communities have 48, 62, 72, 98, 120, and 164 dwelling units. The smallest and largest communities, however, are adjacent and visually similar although managed separately.

All residents at these communities were invited to participate in the study. Each of these 564 households received a mailing addressed to "Resident of [address]." Management at each site was informed of the study and cooperated by verifying that our address list was correct. In many of these communities, however, direct access to residences is restricted, and door-to-door contact would be considered soliciting. No follow-up reminders were sent out. Seventeen of the surveys could not be used because of failure of delivery or incompleteness. Return rates varied substantially across the six apartment communities, with all but one between 26% and 46%. The lowest return rate (19%) was at the site with the lowest rentals and a relatively greater ethnic population. The overall response rate of 34% (188 usable surveys) limits our ability to generalize confidently to the larger population of residents. The lack of information about the demographic composition of each apartment community makes it impossible to ascertain if there might be any systematic biases in who chose to respond.

Based on demographic information participants provided, more than half the sample (57%) were individuals younger than age 40; the rest were evenly divided between those in their 40s and those 50 and older. Many more women (68%) than men responded to the survey. Half the sample (52%) consisted of one-person households, and 58% indicated that they work full-time. There was considerable variation in how long respondents had lived in their present apartment, with more than a third being relatively new residents (38% less one year), and 18% had lived in the same place for 6 years or more. A substantial number (61%) were in a transitional phase in life, expecting to stay in their present apartment for another 2 years or less. Participants were not asked about their household income or ethnicity.

#### **SURVEY INSTRUMENT AND SCALE CONSTRUCTION**

Participants received the survey material through the mail. It included a cover letter indicating the survey was about "trying to understand how trees



and bushes and lawns and flowers relate to how people feel” and that the surveys could be completed in less than 20 minutes. The seven-page survey booklets included a return address and postage on the back cover so they could be returned by folding in half, taping the edge, and dropping in a mailbox. The survey included a few open-ended items; most of the survey questions, however, asked for ratings using a 5-point scale, where the higher the scale value the greater the quality being assessed (e.g., 5 = *very much* or *very often*).

#### **The View From Home**

Both verbal and visual approaches were used to assess the view. In both instances, an effort was made to broadly include the natural and built elements in the residential view. A summary of the measures is provided after describing both the verbal and visual items included in the survey.

*Verbal descriptions.* Participants were asked to consider how dominant each of 17 characteristics were in their view from home by rating them on a 5-point scale (1 = *can't see this* to 5 = *see it almost always*). Instructions indicated that if, for example, there was a parking lot outside a window where a closed curtain generally precluded seeing it, the rating would be 2, indicating the parking lot is only seen occasionally. The items included as components of the built environment and natural features are identified in the next section. One item, “children’s play area,” was not included under either heading and not included in the analyses.

In addition to the listed descriptors, participants were asked to indicate how often they “watch or check on” the weather, traffic, people walking by, and wildlife.

*Photographs.* A five-page photo booklet with 8 black and white photographs per page was included in the mailing to participants. The 40 scenes were taken at the six apartment communities included in the study. The photographs reflected the great diversity of potential views from the windows of these communities, including the following categories: large, open, unattended areas; areas that are mostly natural without visible management; areas that are natural and managed; hard surfaces; small built spaces; built spaces that are screened by vegetation; and various forms of edges of the property (e.g., parking lots or carports, screened vegetation, fences, sidewalks, streets, lawn, and woods). These contents and the six communities were represented on each of the five photo pages.

Participants were asked to rate each of the photographs in terms of similarity to the view from their apartment using a 5-point scale (*not at all like my view to very much like my view*). They were then asked to consider each scene as if it were a view from their window at home and to indicate how much they would like such a view. The preference ratings also used a 5-point scale (*not at all to like it very much*).

*Development of measures.* To find common themes in the residents' visual environment, the photo-based similarity ratings were subjected to factor analysis (principal-axis factoring and varimax rotation) (SPSS, 1998). Factor structure was based on loadings greater than .45; items that loaded on more than one factor were excluded. Other criteria included eigenvalues greater than 1.0 and alpha coefficients of at least .70. Of the five similarity-based factors that emerged, one that was specific to the community with a stream was not included in further analyses. Scenes in the other four factors were mixed in terms of location. Two of these factors reflected built components of the view (Cars and Structures), and two others concerned natural settings (Landscaped and Nature).

*Cars.* The similarity-based Cars factor ( $\alpha = .81$ ) consists of six scenes, each showing one or more parked cars in the housing context. In two instances, the cars are in the foreground and thus dominate the scene. In the other instances, the cars are more peripheral beyond a mown field or on the other side of a road (Figure 1).

*Structures.* The five scenes composing this factor ( $\alpha = .71$ ) all show other buildings in close proximity although all have trees as well (Figure 2).

*Landscaped.* The 10 scenes composing the Landscaped factor ( $\alpha = .90$ ) all have trees in a lawn context as a dominant feature (Figure 3). Although built elements (e.g., buildings or parts of buildings) are visible, they are relatively hidden by the trees.

*Nature.* The nine scenes composing this factor ( $\alpha = .91$ ) include scenes of woods with rough foreground texture and dense vegetation at the edge of the apartment community (Figure 4). Buildings are not visible in these scenes. Unlike the Landscaped scenes, the scenes of the Nature factor do not suggest settings where it would be easy to walk or to see through the vegetation.

(Text continues on page 521)



**Figure 1: Two Scenes From the Cars Factor, Based on Similarity Ratings of Photographs**



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**Figure 2: Two Scenes From the Similarity-Based Structures Factor**  
NOTE: The bottom scene was rated lowest in both similarity and preference of all 40 scenes.



**Figure 3: Two Scenes From the Landscaped Factor, Based on the Photograph Similarity Ratings**

NOTE: The scene at bottom, although its mean rating (3.09) is slightly above midscale, was rated highest in similarity of all 40 scenes.



**Figure 4: Two Scenes From the Nature Factor, Based on the Photograph Similarity Ratings**

NOTE: Both scenes were rated high in preference (means 4.50 and 4.43, top and bottom, respectively).

Tables 1 and 2 indicate the set of measures reflecting the nature and built components, respectively, including both verbal and photo-based measures. The tables also indicate that some items were combined and others were excluded from further analyses. These decisions were based on the criterion that the correlation among the input variables in regression analyses would not exceed .40. Two nature-view items (“gardens, flowers” and “landscaped area [bushes, shrubs]”) exceeded this criterion ( $r = .48$ ) and were combined to form a single measure. Similarly, the items about checking on “parking lot, traffic” and “people going by” were combined to form a single measure because of their correlation of .56. In a few instances, a verbal item and a photo-based factor were correlated above .40; the decision rule in these cases was to exclude the verbal item because the visual material encompassed a richer set of images. This led to the elimination of view of “woods” because of its high correlation with the similarity-based Nature factor ( $r = .62$ ). The verbal item “parking area or carport” was also dropped because of its correlation with the similarity-based Cars factor ( $r = .41$ ).

An additional view-based measure entailed the combination of the three climate-related items (frequency of watching “sunsets or sunrises,” “the sky,” and “the weather”) because responses to the separate items were correlated (mean  $r = .49$ ).

To summarize, the view from home was assessed in terms of the following three content domains: built components, natural elements, and weather. The last of these is a single index, combining ratings of three items. The other two consist of 10 aspects of the built environment and 9 distinct aspects of the nearby natural environment. These contents were represented by verbal descriptors and photographs that participants rated in terms of similarity to their view from home. Although each photo-based measure incorporates ratings of several images, the verbal measures generally reflect a single item that names a category of view. Correlations among the final set of view content predictors is below .40.

*P-HiSim.* One other measure is related to the view but is not directly indicative of content. Rather, it is an effort to take into account whether residents like what they see from the window. We called this measure P-HiSim as it is based on both the preference and similarity ratings. It is the mean preference rating for the scenes that the participant indicated were high (ratings of 4 or 5) in similarity. A brief explanation might be helpful. The 40 scenes were all taken at these apartment complexes, with 8 scenes representing each community (or the two adjacent and visually similar communities). The scenes participants rated as high in similarity, however, did not necessarily correspond to where the scene was photographed. Scenes from their own community

**TABLE 1**  
**View From Home: Nature Content**

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Landscaped area/garden, flowers <sup>a</sup>
Trees
A park
Large mowed area
Farmland, fields
Stream, river, pond
Watch: squirrels, birds, or other animals
Woods <sup>b</sup>
Similarity based: Nature factor
Similarity based: Landscaped factor

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a. Mean of two separate items,  $r = .48$ .

b. Excluded because  $r = .62$  with Similarity based: Nature

**TABLE 2**  
**View From Home: Built Elements**

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Watch: parking lot/people going by <sup>a</sup>
Quiet street
Busy street or highway
Sidewalk
Vacant lot
Houses/apartments
Nonresidential buildings
Fence or wall
Parking area or carport <sup>b</sup>
Similarity based: Cars factor
Similarity based: Structures factor

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a. Mean of two separate items,  $r = .56$ .

b. Excluded because  $r > .40$  with two other variables.

may not have been judged to be similar to their view, whereas scenes taken elsewhere may have been seen as similar to the view from home. These patterns are not surprising. Many of the scenes did not include signature features of a particular residential area. Where buildings were visible, it was easier to discern the location; this was also true for some of the scenes at the site with a stream. Differences in similarity ratings are also attributable to wide variation in people's criteria for what is similar. Two participants considered more than half the scenes as similar to their own view, whereas a majority of the sample ( $n = 99$ ) rated 5 or fewer scenes as relatively high in similarity. P-HiSim takes this variation in similarity ratings into account by computing



the mean preference rating only for the scenes the participant considered as similar to his or her own view.

#### **Activities**

To gauge the relative effect of nature-related activities (as opposed to nature-based views from the home), participants were asked to indicate their frequency of use of places for taking walks, growing flowers or vegetables, a park, open area, and being in nature. They were also asked how often they did certain activities involving the outdoors (e.g., taking walks and gardening). Factor analysis of responses to these items yielded three factors meeting the criteria indicated previously (Table 3).

#### **Demands**

Because hassles and demands may affect the likelihood of feeling restored and effective, the survey included a section on "Demands on Your Life." These items were divided in terms of the home situation and responsibilities outside the home. Factor analysis yielded two factors divided along these lines. The Home Pressures factor included three items (e.g., "In general, how pressured and stressful is your home life" and "I have too much to do"), and the Nonhome Demands factor included four items (e.g., "There are too many time pressures and deadlines" and "There are too many distractions and interruptions").

#### **Background**

Age, gender, education, work status, length of residency in their current apartment, and size of household were included as demographic questions.

#### **Dependent Measures**

The key dependent variables were participants' satisfaction with their residential environment and measures of well-being. Scale construction was based on factor analyses of these two sets of items.

*Satisfaction.* Participants were asked about their satisfaction with the physical and social aspects of their apartment community. The 5-point response scale for these 14 items went from *not at all* to *very much*. These items yielded two factors (alpha coefficients of .86 and .81) (Table 4).

**TABLE 3**  
**Nature-Related Activity Factors**

<i>Factor</i>	<i>Loading</i>	<i>Item</i>	<i>Alpha</i>
Outdoors			.81
	.70	A park	
	.70	Spend time outdoors	
	.68	Take walks or hikes	
	.65	Place to be in nature	
	.59	Bike or jog in the neighborhood	
	.58	Good place for taking walks	
	.48	Field or open area for playing	
Quiet Nature			.77
	.90	Watch squirrels, birds, or other animals	
	.61	Enjoy nature	
Garden			.75
	.77	Place to grow flowers/vegetables	
	.72	Garden	

Although the correlation between these scales is relatively high ( $r = .60$ ), both were included in further analysis because of their high internal consistency and focus on different dimensions of satisfaction. Satisfaction With Neighborhood reflected sense of security, social aspects, and general maintenance and appearance of the community. Satisfaction With Nature, by contrast, focused on the trees, open space, and nature in the apartment community. Participants were also asked about their satisfaction with the view from home. This single item correlated highly ( $r = .75$ ) with the Satisfaction With Nature scale.

*Well-being.* The intention of the well-being items was to focus on the mental states that are assumed to be related to the attention restoration framework. We drew on several previous studies in developing this measure (Cimprich, 1992; R. Kaplan, 1993; R. Kaplan, Bardwell, Ford, & Kaplan, 1996), which consisted of 16 brief descriptors and 15 adjectives. This section of the survey was titled "Feelings" and asked participants to consider the "last few days" as the frame of reference. For the descriptors, the 5-point rating scale ranged from *never or rarely* to *very frequently*, whereas the adjectives were rated in terms of *not at all* to *extremely*. Factor analysis yielded three factors (Table 5). The Effective Functioning scale includes more general subjective well-being items but as a whole suggests a state of being effective. The second factor, At Peace, reflects a calm, tranquil state of mind, whereas the

**TABLE 4**  
**Satisfaction Measures**

<i>Factor</i>	<i>Loading</i>	<i>Item</i>	<i>Alpha</i>
Neighborhood	.76	Security and safety	.86
	.74	How friendly people are	
	.69	Appearance of grounds	
	.65	General maintenance	
	.61	The variety of people	
	.58	Sense of community	
	.47	Parking arrangement	
Nature	.73	Having enough nature nearby	.81
	.65	Amount of open space	
	.64	Trees and other landscaping	
	.61	Private outdoor space	

third factor, Distracted, consists of items that suggest manifestations of fatigued directed attention. Although the three factors are intercorrelated (correlations between the first two factors was .54 and between the other pairs  $-.44$  and  $-.48$ ), they point to useful contrasts in the well-being domain. (Correlations between satisfaction and well-being measures were between .05 and .27.)

## RESULTS

The Results section is organized in terms of five groups of independent variables. Three of these involve view content: nature elements, built components, and weather. A fourth, P-HiSim, reflects the relationship between what can be seen from one's window and how much it is liked. The final group of independent variables covers the participants' outdoor activities. In separate subsections for each of these domains, results of regression analyses are presented for each of the five outcome measures (Effective Functioning, At Peace, Distracted, Satisfaction With Nature, and Satisfaction With Neighborhood). In the final subsection, results are presented for each of the outcome measures using hierarchical regression analyses to assess the relative importance of the content, preference, and activities domains.

**TABLE 5**  
**Well-Being Measures**

<i>Factor</i>	<i>Loading</i>	<i>Item</i>	<i>Alpha</i>
Effective Functioning			.90
	.74	Energetic and excited about what you are doing	
	.71	Life is interesting and challenging	
	.69	On top of the world	
	.65	Focused	
	.62	Effective	
	.62	Positive	
	.57	Able to get really absorbed in a task	
	.56	Alert	
	.56	Satisfied with how things have been going lately	
	.53	You have a good sense of where you're going	
	.51	Competent	
	.47	Attentive	
	.46	You can keep your mind on what you are doing	
At Peace			.83
	.75	Relaxed	
	.72	Comfortable	
	-.63	Irritable	
	-.57	Everything was an effort	
	-.52	Harried	
	.51	Patient	
Distracted			.85
	.71	Forgetful	
	.68	Disorganized	
	.67	You were losing or misplacing things	
	.63	It's difficult to finish things you have started	
	.62	Making decisions is difficult	
	.56	It's hard to make up your mind	
	.54	You were making mistakes	

#### VIEW FROM HOME: NATURE CONTENT

Table 1 lists the nine distinct nature-based contents that were entered in the regression analyses. Table 6 shows which of these were significant predictors ( $p < .05$ ) in each of the analyses. Nature views played a particularly important role in participants' Satisfaction With Nature, collectively accounting for 41% of the variance. Perhaps more surprising is that the nature items also played a strong role in explaining Satisfaction With Neighborhood ( $R^2 = .35$ ). The view of landscaped areas and gardens is the leading predictor for both satisfaction measures, but the other significant items differ. As

**TABLE 6**  
**Results From Regression Analyses Using Nature Content**  
**of View From Home to Predict Well-Being and Satisfaction**

	<i>Effective Functioning B</i>	<i>At Peace B</i>	<i>Distracted B</i>	<i>Satisfaction With Nature B</i>	<i>Satisfaction With Neighborhood B</i>
Landscaped/garden	.09*	.04	-.01	.30***	.25***
Trees	.03	.20**	-.18**	.17*	.12
A park	.06	-.09	.02	-.10	-.12*
Large mowed area	.01	.03	.03	.09*	.04
Farm, field	.09	.13	-.17*	-.05	-.08
Stream, river	-.02	-.04	.03	.06	-.06
Wildlife	.08	.02	.04	.00	.02
Similarity based: Nature factor	.01	.02	.07	.30***	-.04
Similarity based: Landscaped factor	-.01	-.03	-.10	.00	.14*
$R^2$	.11	.10	.08	.41	.35
$F$	2.25*	2.02*	2.28*	12.36***	9.53***

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

indicated in the table, sense of security and community (i.e., Satisfaction With Neighborhood) is negatively affected by having a view of a park.

The nature-based views were also significant predictors of each of the three well-being measures but to a lesser extent. Having trees in the view was important to being At Peace and not being Distracted, whereas views of landscaped areas and gardens supported Feeling Effective.

#### VIEW FROM HOME: BUILT ELEMENTS

Table 2 lists the 10 built elements that were included in the regression analyses. As Table 7 shows, having a busy street or highway in one's home view and views dominated by structures have a negative influence on satisfaction. It is noteworthy, however, that the built components played no significant role with respect to any of the well-being measures.

#### SEEING THE WEATHER

The three weather-related items were combined as a single measure. Checking on the weather proved to have a small but significant role with respect to Effective Functioning,  $R^2 = .04$ ,  $p < .05$ ; Satisfaction With Nature,  $R^2 = .07$ ,  $p < .001$ ; and Satisfaction With Neighborhood,  $R^2 = .04$ ,  $p < .01$ .

**TABLE 7**  
**Results From Regression Analyses Using Built Elements**  
**of View From Home to Predict Well-Being and Satisfaction**

	<i>Effective Functioning B</i>	<i>At Peace B</i>	<i>Distracted B</i>	<i>Satisfaction With Nature B</i>	<i>Satisfaction With Neighborhood B</i>
Quiet street	.09*	.01	-.04	.02	.02
Busy street	-.03	-.05	.07	-.14*	-.26***
Sidewalk	.01	.04	.00	.01	.07
Vacant lot	.06	.00	-.02	-.02	-.05
Houses	.00	-.04	.00	.02	.06
Nonresidential buildings	.01	-.02	-.01	-.02	-.02
Fence or wall	.01	.00	.01	-.02	-.02
Parking/people	-.01	.02	.02	-.07	.05
Similarity based: Cars factor	-.18*	-.13	.16	-.19	-.17
Similarity based: Structures factor	-.08	-.04	-.04	-.23*	-.19*
$R^2$	.08	.03	.03	.13	.22
$F$	1.37	0.43	0.53	2.34*	4.26***

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

#### PREFERENCE

The 40 scenes provided diverse images of the kinds of views available from the apartment communities included in the study. Preference ratings for the scenes each participant marked as similar (rating of 4 or 5 on a 5-point scale) were averaged to form the P-HiSim index. Thus, participants may have the same value on this measure regardless of how many scenes they considered as similar to their views, because the score reflects their preference. Regression analysis results showed that this single measure accounted for 30% of the variance ( $p < .001$ ) in explaining Satisfaction With Nature (for Satisfaction With Neighborhood,  $R^2 = .05$ ,  $p < .005$ .) Thus, to the degree that highly similar scenes were also highly preferred, Satisfaction With Nature was enhanced.

P-HiSim was also a significant predictor for two of the well-being scales, Effective Functioning,  $R^2 = .05$ ,  $p < .005$ , and At Peace,  $R^2 = .04$ ,  $p < .01$ . High preference for the view from the window would thus seem to affect participants' sense of their effectiveness and feeling calm and tranquil.

The most preferred scenes for the sample as a whole were the nature scenes showing relatively unmanaged woods. The four scenes receiving the highest preference ratings (means between 4.2 and 4.6) were members of the

Nature factor (mean 3.99). Although all scenes were taken at the participants' sites, five of the Nature factor scenes were also among those receiving the lowest similarity ratings. In other words, what participants favored most was also rated by them as least available. A notable exception to this pattern (Figure 4, bottom) is a scene that was considered relatively higher in similarity.

The mean preference rating of the scenes of the Landscaped factor, 3.07, was significantly lower than the mean for the Nature factor scenes but significantly greater than the means for the other factors. The two scenes shown in Figure 3 varied considerably in preference (2.80, top and 3.52, bottom). As a group, the scenes in this factor received the highest similarity rating, with a mean of 2.50 (the only scene to receive a similarity rating above midscale is shown in Figure 3, bottom). By contrast, the average similarity rating for each of the other factors was 1.70.

Preference means for the Structures factor, 1.76, and the Cars factor, 1.91, were statistically equivalent, as were their similarity ratings. The scene in Figure 2 (bottom) received the lowest preference and similarity ratings (1.09 and 1.27, respectively) of the 40 included in the study.

The pattern of higher preference for scenes with greater nature content would suggest that higher scores on P-HiSim reflect having more nature in the view from home. It is thus not surprising that P-HiSim is a strong predictor of Satisfaction With Nature. The significant role P-HiSim played with respect to two well-being measures, Effective Functioning and At Peace, provides an interesting indication of the relation of preference and well-being.

#### ACTIVITIES

Results of regression analyses using the three nature-related activities measures (listed in Table 3) are presented in Table 8. Gardening-related activity was a significant predictor for both satisfaction measures. Outdoors, including more active outdoor nature-related activities, was a significant predictor of Satisfaction With Nature and the Effective Functioning measure. For both of these measures, Quiet Nature, representing more passive activities, was significant if the Outdoors measure was not in the equation. Regression results for the other two well-being measures were not significant.

#### COMBINING SIGNIFICANT PREDICTORS

In this section, we examine the relative contributions of the predictors found to be significant in the separate analyses of the three view content-based domains, preference, and activities. The major emphasis here is on the benefit that can be attributed to the nature content and to having preferred

**TABLE 8**  
**Results From Regression Analyses Using Nature-Related Activities to Predict Well-Being and Satisfaction**

	<i>Effective Functioning</i> B	<i>At Peace</i> B	<i>Distracted</i> B	<i>Satisfaction With Nature</i> B	<i>Satisfaction With Neighborhood</i> B
Outdoors	.17*	.09	-.21	.22*	-.02
Quiet nature	.09	.03	.08	.13	.08
Garden	.03	.02	.00	.16*	.23***
$R^2$	.08	.01	.04	.13	.11
F	4.93**	0.76	2.13	8.64***	7.21***

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

views. Thus, the first steps in the hierarchical regression analyses consider the predictive power of the other influences, starting with the effect of the nonnature content domains (i.e., the weather and the built elements) and nature that is not view based (i.e., activities). The next step, then, examines the additional contribution of nature content in the view, and the final step explores whether having preferred views (i.e., P-HiSim) further adds to the outcome. Because the significant predictors for each outcome measure do not necessarily include each of these domains, the hierarchical analyses vary in the number of steps that were used. The results of these combined models are presented separately for each outcome measure.

*Effective Functioning.* In the separate analyses presented earlier, four of the predictors were significant in accounting for this outcome measure; the results of entering these hierarchically are presented in Table 9. The influence of watching the sky, sunsets, and weather was somewhat weakened (Step 2) when the activity-based measure was entered. The addition of the nature view item (Step 3), however, replaced weather as a significant predictor. The addition of P-HiSim to the model (Step 4) did not significantly add to  $R^2$ , thus the two significant predictors ( $R^2 = .11$ ) of Effective Functioning were involvement in outdoor activities and having a view of gardens and flowers.

*At Peace.* Table 10 shows that both significant predictors from the prior analyses, having a view of trees and preferred scenery to look at, were important to participants' sense of being relaxed and not irritable. These accounted for 10% of the variance. By contrast, not having many demands and pressures at home and at work played a far more important role in the sense of being At Peace, accounting for an additional 25% of the variance.



**TABLE 9**  
**Significant Predictors of Effective Functioning**  
**Based on Hierarchical Regression Analysis<sup>a</sup>**

	Step 1: Weather B	Step 2: + Activities B	Step 3: + Nature View B	Step 4: + P-HiSim <sup>b</sup> B
Weather	.16**	.13*	.10	.09
Activities: Outdoors		.18**	.16*	.15*
Landscaped, garden			.08*	.07
P-HiSim				.08
$R^2$	.05	.08	.11	.12
F change	7.69**	6.73**	4.42*	2.47

a. Significant predictors from the separate analyses are added in successive steps: Step 1: weather; Step 2: nature-based activity; Step 3: nature view elements; Step 4: P-HiSim.

b. P-HiSim = the mean preference rating for the scenes that the participant indicated were high (ratings of 4 or 5) in similarity.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

*Distractions.* Two nature view–related items, trees and fields, were significant predictors of this well-being dimension ( $R^2 = .07$ ). Participants who had more of these nature elements in their view rated themselves as less likely to be forgetful and disorganized. Once again, the perception of external demands played an important predictive role. In this case, however, it was only the Nonhome Demands that were significant, adding 10% of the variance (Table 11).

*Satisfaction With Nature.* Ten predictors were significant in the separate analyses; 6 of these remained in the final regression equation with  $R^2 = .53$ . Table 12 documents the shifts in significant predictors as each new domain is added to the model. The role played by viewing the weather was usurped once nature elements were included; the negative effect of busy streets disappeared when the nature view variables were introduced but reappeared with the addition of P-HiSim. The other built component—based on the similarity ratings of the photographs with nearby residential structures—was consistent as an important negative influence on nature satisfaction. The addition of the nature view elements changed the  $R^2$  by .22; P-HiSim contributed another .07. Satisfaction With Nature is heavily influenced by having nature in the view and especially by preferred scenery.

*Satisfaction With Neighborhood.* The final regression model (Table 13) included the following five predictors: a nature-related activity (gardening), two built elements (views of busy streets and of nearby structures), and two

**TABLE 10**  
**Significant Predictors of At Peace**  
**Based on Hierarchical Regression Analysis<sup>a</sup>**

	<i>Step 1: Nature View</i> <i>B</i>	<i>Step 2: + P-HiSim<sup>b</sup></i> <i>B</i>	<i>Step 3: + Demands</i> <i>B</i>
Trees	.25***	.22**	.12*
P-HiSim		.13*	.13*
Home pressures			-.15*
Nonhome demands			-.30***
$R^2$	.08	.10	.35
$F$ change	13.31***	4.80*	31.12***

a. Significant predictors from the separate analyses are added in successive steps: Step 1: nature view elements; Step 2: P-HiSim; Step 3: perceived demands.

b. P-HiSim = the mean preference rating for the scenes that the participant indicated were high (ratings of 4 or 5) in similarity.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

**TABLE 11**  
**Significant Predictors of Distracted**  
**Based on Hierarchical Regression Analysis<sup>a</sup>**

	<i>Step 1: Nature View</i> <i>B</i>	<i>Step 2: + Demands</i> <i>B</i>
Trees	-.18**	-.15*
Farmland, fields	-.16*	-.13
Nonhome demands		.23***
$R^2$	.07	.17
$F$ change	6.38**	19.79***

a. Significant predictors from the separate analyses are added in successive steps: Step 1: nature view elements; Step 2: perceived demands.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

components of the nature view (landscaped areas and flowers). Two of these five predictors are based on the similarity ratings of the photographs. Once again, the view of nature elements added substantially ( $R^2$  change of .18), leading to a final  $R^2$  of .45. The preference for the view (P-HiSim) did not affect this outcome measure. Thus, although the two satisfaction measures are correlated, the pattern of significant predictors was quite different, reflecting the different foci of the two measures.

*Summary.* Nature views played a substantial role in participants' satisfaction with their residential context. They also played a significant although

**TABLE 12**  
**Significant Predictors of Satisfaction With**  
**Nature Based on Hierarchical Regression Analysis<sup>a</sup>**

	<i>Step 1:</i> <i>Weather</i>	<i>Step 2:</i> <i>+ Built View</i>	<i>Step 3:</i> <i>+ Activities</i>	<i>Step 4:</i> <i>+ Nature View</i>	<i>Step 5:</i> <i>+ P-HiSim<sup>b</sup></i>
	<i>B</i>	<i>B</i>	<i>B</i>	<i>B</i>	<i>B</i>
Weather	.26***	.26***	.16*	.05	.03
Similarity based:					
Structures factor		-.27**	-.26**	-.25***	-.19*
Busy street		-.10	-.12*	-.07	-.09*
Activity: Outdoors			.31***	.19*	.17*
Activity: Garden			.14*	.08	.07
Landscaped, garden				.25***	.20***
Trees				.10	.09
Large mowed area				.07*	.05
Similarity based:					
Nature factor				.28***	.15*
P-HiSim					.27***
<i>R</i> <sup>2</sup>	.06	.15	.24	.46	.53
<i>F</i> change	10.81***	7.76***	9.34***	15.71***	22.22***

a. Significant predictors from the separate analyses are added in successive steps: Step 1: weather; Step 2: built view elements; Step 3: nature-related activities; Step 4: nature view elements; Step 5: P-HiSim.

b. P-HiSim = the mean preference rating for the scenes that the participant indicated were high (ratings of 4 or 5) in similarity.

\**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

smaller role in each of the three aspects of well-being included in the study. The specific components of the nature view that were predictive varied. Views of gardens and flowers were important to satisfaction and Effective Functioning. Views of trees, by contrast, were more pertinent to the sense of being restored and having one's directed attention intact.

The relationship of preference and restoration is suggested by the significance of P-HiSim both in the Satisfaction With Nature and the At Peace outcome variables. In these cases, having a preferred view from home added significantly to the role of nature content.

Outdoor activities were particularly important with respect to Effective Functioning and Satisfaction With Neighborhood but were not significant for the other outcome measures.

Finally, built components significantly detracted from residential satisfaction but did not affect well-being.

**TABLE 13**  
**Significant Predictors of Satisfaction With Neighborhood**  
**Based on Hierarchical Regression Analysis<sup>a</sup>**

	<i>Step 1:</i> <i>Weather</i>	<i>Step 2:</i> <i>+ Built View</i>	<i>Step 3:</i> <i>+ Activities</i>	<i>Step 4:</i> <i>+ Nature View</i>	<i>Step 5:</i> <i>+ P-HiSim<sup>b</sup></i>
	<i>B</i>	<i>B</i>	<i>B</i>	<i>B</i>	<i>B</i>
Weather	.20**	.20**	.13	.05	.04
Similarity based:					
Structures factor		-.19*	-.17*	-.24**	-.23**
Busy street		-.22***	-.21***	-.18***	-.18***
Activity: Garden			.21***	.13**	.13*
Landscaped, garden				.23***	.22***
Similarity based:					
Landscaped factor				.16*	.16*
Park				-.01	-.01
P-HiSim					.01
<i>R</i> <sup>2</sup>	.04	.21	.27	.45	.46
<i>F</i> change	7.11**	16.60***	14.62***	17.24***	.09

a. Significant predictors from the separate analyses are added in successive steps: Step 1: weather; Step 2: built view elements; Step 3: nature-related activities; Step 4: nature view elements; Step 5: P-HiSim.

b. P-HiSim = the mean preference rating for the scenes that the participant indicated were high (ratings of 4 or 5) in similarity.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

## DISCUSSION

Unlike some other settings (e.g., schools, hospitals, and the workplace), in the residential context, windows are assumed to be available. What can be seen from the windows of different homes varies considerably, and the role played by these differing contents deserves attention, especially in the context of apartment dwellings where residents have less opportunity to affect their nearby outdoor environment. This study explored a range of content domains in the window view and their relationship to three dimensions of well-being and to residential satisfaction. In addition, the study included nature-related activities to ascertain the degree to which being in the environment plays a significant role as opposed to the effect of witnessing the environment from a window. The role of each of these content domains is summarized in the next few paragraphs. The findings of the study are also useful in providing some insights about the two outcome domains. The final portion of the Discussion section explores the relationships among the three aspects of well-being and between the two satisfaction measures.

**SEEING THE SKY, CHECKING THE WEATHER**

One of the functions of windows is to permit access to the sky. Checking to see the weather, seeing sunsets and sunrises, and watching the clouds are all common activities that are afforded by windows. The three survey items related to these issues were strongly correlated and therefore combined into a single measure. The frequency of checking on the sky and weather played a small role in accounting for participants' sense of Effective Functioning and their satisfaction. When included with other content domains, however, it was not significant.

**NATURE-BASED ACTIVITIES**

Outdoor activities were an important factor in participants' reported Effective Functioning. Individuals who spend time outdoors, take walks or hikes, go to a park, or bike or jog in the neighborhood were more likely to indicate that they felt positive, focused, effective, and alert. Being in nature, however, did not play a significant role with respect to the other two well-being measures; the results do not show that participating in outdoor activities was important to participants' feeling At Peace or less Distracted.

Involvement in gardening activities enhanced Satisfaction With Neighborhood. Apartment complexes such as the ones included in this study only rarely provide opportunities for residents to grow flowers or vegetables. Community garden plots that were available to these participants were not in walking distance. These results suggest that permitting gardening near home would be a positive element in residents' neighborhood satisfaction.

**SEEING BUILT ELEMENTS**

The view from windows in these apartment communities generally includes streets, sidewalks, other buildings, parking areas, and fences or walls. It is striking that these built elements played no significant role with respect to the participants' sense of well-being. The built aspect of the view did affect satisfaction with nature and with the neighborhood. In particular, having views similar to the photographs of structures was a significant negative component of both satisfaction measures. The photographs were useful in articulating the views of structures and cars. Unlike the verbal items about views of "houses/apartments" or "nonresidential buildings," the similarity of the view to the photos played an important role. Nearby "busy streets" also had a negative effect on neighborhood satisfaction.

#### VIEWS OF NATURE

Nature in the window view was a strong factor in well-being and residential satisfaction. *Nature* here is used to encompass vegetation in many forms including trees, residential landscaping, gardens, and even mowed areas. Although this broad use of the word runs counter to the norms of many who are engaged in ecological restoration and preservation, it is based on substantial empirical support (R. Kaplan, Kaplan, & Ryan, 1998). In popular usage and especially in the urban context, nature is a very inclusive concept. This broad use is supported by the diversity of nature elements that emerged in the present study as significant components of satisfaction and well-being.

Having views of shrubs and flowers played a significant role with respect to Effective Functioning. The nature views that were predictive of the other two well-being measures provide an interesting contrast. For both the At Peace and Distracted scales, the view of trees was the most important environmental predictor. In addition, being able to view farmland or fields contributed to feeling less distracted (the latter item referred to both farms and fields; none of the sites, however, had nearby farms).

Although having nature in the view from home played an important role with respect to both the satisfaction and the well-being measures, the results suggest some striking differences in the particular nature elements that were most influential. Views of gardens, flowers, and landscaped areas played a strong positive role in participants' residential satisfaction with respect to both nature and neighborhood. However, the photo-based factors that were significant predictors differed for the two satisfaction measures: Landscaped settings (trees amid the smooth texture of lawns) (Figure 3) were predictive of neighborhood satisfaction, whereas the less managed or manicured nature scenes (Figure 4) were important to nature satisfaction. Despite this contrast, however, the importance of views of "large mowed areas" (a verbal item) in satisfaction with nature suggests that neatness and the appearance of care (Nassauer, 1995) play roles in both dimensions of satisfaction included in the study.

#### PREFERENCE

The elements in the view from home discussed earlier are all based on respondents' reports of environmental features in their residential context. These predictors were not based on whether participants enjoy the view but rather on the presence of these features in their setting. The study also included indications of participants' preferences for different kinds of settings, and these are reflected in the regression equations by the single variable

P-HiSim. If participants like what they see from their windows, it would presumably affect how they feel about their surroundings. This was in fact the single most important component of the Satisfaction With Nature scale and also was a significant aspect of the sense of being At Peace. Nonetheless, perhaps more surprising is the fact that having preferred views did not contribute more substantially to satisfaction or well-being. The nature content of the view from home played a stronger role than preference.

P-HiSim is an ipsative measure based on different scenes for each participant. There is thus no way to describe the content of the scenes constituting this measure. However, because the scenes receiving the highest preference ratings in the study depicted wooded settings, it stands to reason that participants whose window views included more wooded scenes would have had higher P-HiSim ratings. That said, it is also worth noting that the six sites did not differ with respect to the means and ranges in P-HiSim or in the pattern of indicating which scenes were high in similarity.

#### WELL-BEING DOMAINS

The three empirically derived well-being domains are interesting to examine with respect to attention restoration theory. Each domain taps facets of the consequences of attentional demands, making it appropriate that they are somewhat interrelated. At the same time, however, each also reflects a different piece of the story. The Distracted domain is perhaps the most straightforward. The items included in this measure are manifestations of a deficit of directed attention. It is noteworthy that nonhome demands are salient with respect to this mentally fatigued state.

By contrast, the At Peace domain, although also affected by nonhome demands, is the only one of the well-being measures that is significantly influenced by pressures at home. If home is to be refuge, the place where one can be calm and comfortable, then recovery from the workaday world would be impeded by a stressful home life. Unlike the more cognitive aspects of the Distracted measure, At Peace reflects a more affective outcome.

The third measure, Effective Functioning, combines several of the dimensions emphasized by positive psychology (Seligman & Csikszentmihalyi, 2000). Included among the items in this factor are not only feelings of being energized and content but also focused and competent. This combination of items suggests a readiness to take on the tasks of life. A person scoring high on Effective Functioning is presumably benefited by interest in and excitement about the tasks at hand, thus requiring less directed attention to accomplish what has to be done. (Neither of the demands measures was significantly related to Effective Functioning.)

**SATISFACTION MEASURES**

The two satisfaction measures were also empirically derived. Although correlated ( $r = .60$ ), they emerged as separate factors, each with strong internal consistency. Perhaps it is not surprising that Satisfaction With Nature is a distinct factor; the combination of social and physical considerations in the Satisfaction With Neighborhood measure, however, may be less expected. The pattern of results with respect to each of these satisfaction measures suggests some important steps for developers and managers of apartment communities.

**ENHANCING MICRO-  
RESTORATIVE OPPORTUNITIES**

Before generalizing from these findings, some cautionary comments are appropriate. Several factors limit the extrapolations one can make from this study. Clearly, the relatively low response rate makes it more difficult to assess the representativeness of the sample. However, even a higher response rate would preclude knowledge about these issues at apartment communities that have less vegetation, more children, or whose location is more urban. This study was conducted at six low-rise apartment communities in one midsized midwestern city. The communities varied in size, although none was extremely large. The apartments were rented, not owned. No information is available as to residents' concerns about vegetation in selecting their apartment community or a particular apartment within each community, and neither is it known how the pattern of outdoor activities differs for this sample compared with individuals living in other settings. It is thus impossible to know the extent to which the findings generalize to single-family homes or high-rise buildings, higher income housing, or places where residents have the opportunity to affect their view from home. Looking out onto one's own land could well play a different role in one's residential satisfaction and in one's sense of well-being.

The study is also limited to the participants' self-report of the views from their homes. It is not the case, however, that objective measures of such environmental qualities would necessarily be more appropriate; each approach has different shortcomings. The use of both verbal items and photographs strengthens the sampling of the environments in question. Furthermore, having the scenes rated in terms of similarity and preference provides insights into the experience of the view from home both in terms of content and in the degree to which it is appreciated.



#### THE EFFECT OF NATURE CONTENT

The findings provide considerable support for the premise that the content of the view from the window in the home setting makes a difference. Nature content contributed substantially and differentially to residents' satisfaction with nature and with their neighborhood; the availability of gardens and well-landscaped areas was particularly salient to these satisfactions. Cooper-Marcus and Sarkissian (1986) pointed out that the primary basis for judgments of the attractiveness of one's neighborhood is what can be seen from the window of one's home. The salience of window views in participants' residential satisfaction corroborates their statement. Considering the vital role played by the view from the window, it is surprising that this aspect of housing has not received greater empirical attention. It is perhaps even more disturbing that so many residential settings are deficient in providing nature views. The devotion expressed by plantings around entranceways to housing developments needs to be extended to the landscaping that can be seen from the home.

Nature content also contributed in important ways to each of the well-being domains. Notable here were the differing roles played by the natural environment in accounting for each of the well-being measures. The sense that one is functioning effectively was influenced by more active involvement with the environment; the sense of being at peace, by contrast, was enhanced by having trees in the view. Furthermore, views of certain kinds of built elements detracted from satisfaction but had no influence on well-being.

It might be argued that although interesting, accounting for some 10% of the variance in terms of the effects of nature on well-being is too little to be noteworthy. Two independent sources of information, however, argue for quite the opposite view. On pragmatic grounds, Romm and Browning (1994) pointed out that because labor costs are typically by far the highest that businesses must contend with, even a 10% increase in productivity can have important implications from an economic perspective. Although their comments were in the context of lighting improvement, a reduction in mental fatigue could well be comparably beneficial.

The case is even stronger on empirical and conceptual grounds. A striking and consistent finding in subjective well-being research is how resistant it is to even major influences (Diener, 2000). Increases in wealth, for example, long thought to have a profound influence on happiness, in fact contribute little beyond abject poverty. Major life events, such as the loss of a job or winning the lottery, have effects but dissipate rapidly. The tendency for such big events to show rapid habituation or adaptation sheds an interesting perspective on nature benefits that seem remarkably resistant to habituation. In light

of the considerable literature on subjective well-being, the 10% accounted for by the natural environment appears remarkably substantial.

#### THE RESIDENTIAL VIEW REVISITED

It is unlikely that people would list looking out the window as part of their recreational activities. Not only would time spent this way be discounted as too brief, window viewing simply does not "count" as an activity. Yet window viewing can fulfill many of the same functions as more acknowledged forms of recreation. Although one is not in the setting, the opportunities for observation may be even more intense than when one is in it. And to the extent that there is nothing in particular to observe, just looking into the world beyond the glass encourages the mind to wander. In other words, there are many ways in which the view from the window can be conceptually engaging, thus providing restorative moments.

The study reported here raises many questions and suggests many further studies. It would be unfortunate, however, to conclude that further research is needed before putting some of these findings to use. If the content of the view from the window can have a positive effect on the quality of life of apartment dwellers, it is appropriate to consider ways to enhance such opportunities.

Fortunately, many ways to make a substantial difference require relatively little cost or effort. *With People in Mind* (R. Kaplan et al., 1998) offers several patterns that address ways to enhance micro-restorative opportunities that the window view affords. Among these are providing visual access, smooth ground textures, trees, and the sense of enclosure.

Unfortunately, despite such potentially simple solutions, the views from many apartment dwellings leave much to be desired. Participants in this study reported a very low match between the views they preferred and the views available to them. At the same time, a match between what one sees and what one likes to see has an effect on satisfaction, suggesting that permitting residents to affect their own view can be a simple and powerful innovation.

The results of this study add to the growing literature that suggests that nature elements must not be considered as amenities but as basic to satisfaction and well-being. Accumulating from many short episodes, the view from the window can provide long-term contact with the natural environment. Perhaps such an enduring connection is particularly useful for sustaining restoration. Given the multitude of cultural and commercial forces that reduce the likelihood of many people's connection with the natural environment, cultivating the window view as a source of pleasure and restoration is worth both further study and appropriate action.

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