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A Place Just Right: Effects of Place Attachment on Preference for Restorative Environments

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Abstract

The present study was designed to test whether natural environments are perceived as most restorative by all people regardless of background or whether preference for type of potentially restorative setting varies according to the type of settlement and the level of nature in the place one is most attached to. Accordingly, participants were asked to imagine themselves in a fatigued state of mind and then rate a series of 15 images on how restorative they would find the settings depicted. Participants were also asked to identify the place they felt most strongly attached to and to classify this place as rural, suburban/small town, or urban. Results revealed a main effect of Image Type where rural images were consistently rated as most restorative across conditions. More importantly, results revealed an interaction of Image Type X Setting of Place Attachment, wherein the preference for rural images was highest for those who were most strongly attached to a rural setting, less for those who were most strongly attached to a suburban setting, and nonexistent for those who were most strongly attached to an urban setting. This suggests that while settings high in levels of nature are restorative across the board, urban settings can also be as restorative as rural settings for those who are most strongly attached to them and that preference for type of restorative setting varies by the setting of the place attachment.
A Place Just Right: Effects of Place Attachment on Preference for Restorative Environments

Humans must contend with many stressors in everyday life. College students, for example, are often under a good deal of stress. They spend an enormous amount of time reading for classes, focusing on lectures, writing papers, working on projects, preparing presentations, and studying for exams. All of these activities require directed attention, which Kaplan and Kaplan (1989) define as an effortful, voluntary form of attention that requires one to concentrate and to ignore distractions. This concentration is on a particular stimulus that the student may (or may not) find uninteresting but must attend to nonetheless (Scopelliti & Giuliani, 2004).

Subsequently, college students often suffer from mental fatigue as a result of this sustained directed attention, and the fatigue not only makes it harder to concentrate but can also lead to an increase in irritability and impulsivity as well as a decrease in performance (Felsten, 2009; Herzog, Maguire, & Nebel, 2003). This resulting inability to focus can in turn cause even more stress (Kaplan, 1995). When this occurs, it is wise to take a break from studying in order to restore capacity to focus and to avoid the negative consequences of mental fatigue.

Restoration, as defined by Korpela et al. (2001), is the process of recovery that follows stress or fatigue, involving an enhancement of mood, a renewed capacity for directed attention, and possible self-reflection. There are various qualities of a place that can make it more conducive to restoration. According to Kaplan and Kaplan’s (1989) Attention Restoration Theory (ART), restorative environments, or environments that help people recover from mental fatigue, generally have four elements that make them restorative: peaceful Fascination (natural curiosity or interest without the necessity of suppressing distracting stimuli) that allows for personal reflection; a sense of Being away (from one’s normal setting, routine activities, and unwanted distractions); Extent/Coherence (large enough scope to have a range of elements for
the mind to explore and that exist as part of a larger whole that one can make sense of in terms of organization and structure); and Compatibility (opportunities to meet an individual’s preferences and purposes) (Felsten, 2009; Herzog et al., 2003; Kaplan & Kaplan, 1989).

In accordance with Wilson’s (1984) Biophilia Hypothesis that humans have an “innate tendency to focus on life and lifelike processes,” (p. 1) natural places or environments with a high degree of nature in them have been often been cited as restorative (Kaplan & Kaplan, 1989; Tennessen & Cimprich, 1995; Ulrich, 1984). According to this hypothesis, evolutionarily, humans may innately and unconsciously have a need or liking for open, low-risk environments like the savannas to which human ancestors may have retreated when recovering from a threat (Joye, 2007). This inclination for open, biocentric places may persist into the hard wiring of modern humans, manifesting in the capacity of nature to act as a restorative force. Natural environments contain elements that fit well with the qualities of Attention Restoration Theory. People often choose to vacation in the country for its restorative qualities and use retreats to natural settings as a way to “get away” (Kaplan, 1995).

Contact with nature has been associated with beneficial and restorative effects on human health in a number of circumstances. Studies have shown that patients in hospitals recover faster in rooms with views of nature as opposed to rooms with views of built environments or rooms with no windows (Ulrich, 1984). Views of nature have also been associated with less stressful work environments in general (Kaplan & Kaplan, 1989). Additionally, this contribution of views of nature to attention restoration has been studied in college students. Tennessen and Cimprich (1995) conducted a study that showed that college students who had a window in their dorm rooms that overlooked a scene containing nature performed better on tests of attention completed in said rooms than did students whose dorm room window provided a view of a built
environment. A similar pattern of results has also been observed in a study looking at the perceived restorative qualities of settings on a college campus. This study by Felsten (2009) asked college students to rate digital pictures of potential places on a college campus to relax, socialize, and take a break from studying on their perceived restorative capacities as a function of the four components of attention restoration according to ART (Being Away, Extent, Fascination, and Compatibility) and found that mean restorative ratings were lowest for settings with no views of nature and highest for settings with window views of green space and the least visible built structures. It is possible that these beneficial effects of nature on stress-reduction, recovery, and restoration are universal.

However, most research on the restorative benefits of nature has focused broadly on populations in general and has not looked at variation within the populations. While natural settings tend to be popular favorite places, people do name other settings such as cafes, museums, churches, and homes as their favorite places and as places that make them feel better when they are stressed (Gulwadi, 2006; Korpela & Hartig, 1996). It may be more important for a place to be in line with a person’s preferences than for it to have a high degree of nature or even for it to include aspects of all the components that can contribute to restoration. In particular, research suggests that the four components of ART may vary in their strength of contribution to a place’s overall restorativeness. In a study conducted by Scopelliti and Giuliani (2004), when people were interviewed about experiences they considered restorative, younger people noted more “exciting” experiences and older people noted more “relaxing” experiences; Additionally, in post-hoc analyses of the study, Compatibility was found to have the most relative importance on overall restorativeness. Kaplan and Kaplan (1989) defined Compatibility as the degree to which there is a fit between the opportunities that a setting offers and the desires of what a
person is trying to accomplish or would like to do. Korpela and Hartig (1996) also found that in rating their favorite places on the four elements of ART, participants rated Compatibility and Extent/Coherence as more characteristic of their favorite place than Being Away or Fascination. Thus, if people have varying preferences for activities that they prefer to engage in when stressed or different ways of de-stressing, different environments could be considered restorative for different people.

One possible differentiation could depend on the setting in which one grew up or the type of place one feels most strongly attached to. Korpela et al. (2001) found that people often cited residential settings as their favorite places, so if one’s home is in an urban or suburban environment it is possible that a similar environment might be reminiscent of that favorite and possibly restorative place, even if it does not contain a high level of nature. The way that people relate to places often has much to do with the physical characteristics of the place, but also with their own past experiences in it, and this emerges in a interplay of cognitive, affective, social, and behavior components (Scopelliti & Giuliani, 2004). People often identify their favorite places as places where they have had restorative experiences, and recent research shows strong relationships between restorative experiences, favorite places/place attachment, and personal identity (Scopelliti & Giuliani, 2004).

Place attachment is a construct with many varying definitions and concepts embedded within it, but it generally refers to the bonding of a person to an environment. Scopelliti and Tiberio (2010) define it as “a complex construct that accounts for a person’s affective bonds to place” (p. 337). Altman and Low’s (1992) definition includes affective, cognitive, and behavioral bonds between individuals or groups and a place. Place attachment consists of an attachment to the social features of the place in facilitating social interactions, relationships, and group identity.
but also an attachment to the physical features of the place and the meanings they represent (Scannell & Gifford, 2010). These physical features of an environment differ largely depending on context, such as whether the setting is in the country, a suburb, a small town, or a city. Place identity is also a part of place attachment. The term refers to “dimensions of the self that define an individual’s personal identity in relation to the physical environment by means of a complex pattern of conscious and unconscious ideas, beliefs, preferences, feelings, values, goals, and behavioral tendencies and skills relevant to this environment” (Proshansky, 1978, p. 155). The concept encompasses the idea that part of one’s identity is formed not only by experiences of childhood, as a member of a family, ethnic, racial, sexual, or any other social group, but also by the physical place in which these experiences and identity formations take place, be it in a home, a backyard, a building, a classroom, or any other such place (Proshansky, 1978). These formative experiences as well as restorative experiences in such places can lead one to identify with and become attached to them. Identifying with a place could make it seem more compatible to one’s preferences and thus more restorative within the ART framework (Korpela & Hartig, 1996).

Place attachment can also take a more generalized form as Feldman (1990) defined in the concept of “settlement-identity,” meaning the psychological bonds with a certain types of setting or category of place such as rural, suburban, or urban. This sort of generic place attachment might allow individuals to feel connected to many different locations, provided that those locations have certain similar qualities and characteristics (McAndrew, 1998). Furthermore, people may identify as a “city person” or a “country person” and may seek out these types of places in order to maintain congruency and a continuity of self as that specific type of person (Twigger-Ross & Uzzell, 1996).
There has been some connection of place attachment to restorative environments, but that work does not attempt to determine if variation in preference for a nature-based or non-nature-based place as a potentially restorative environment is due to an attachment to a certain type of settlement (urban, suburban, small town, rural, etc.). However, there is some evidence to suggest that such a connection between place attachment and preference for different types of restorative environments exists. In these studies, favorite places are assumed to be places to which the participant is strongly attached, and descriptions of these places are used as a way to gain insight into a person’s use of the environment in the process of self-regulation, the mental act of processing the psychological influence of external (social, physical, physiological) factors in order to achieve a positive emotional balance (Vuorinen, 1990, as cited in Korpela et al., 2001). Favorite places are restorative because they often provide a secure, comfortable environment that allows a person to engage in self-regulatory processes, recovering from stress and turning attention perhaps to problem solving and self-reflection as one is able to organize thoughts and feelings (Scannell & Gifford, 2010; Korpela, 1989).

Based on this research, it is possible that the type of environment people find most restorative is not derived solely from the amount of nature in it but also from the degree to which it is compatible with their prior place attachment. Indeed, Korpela and Hartig (1996) posited a connection between ART, restorative experiences, and place attachment, noting that deeply restorative experiences that occur in a place over time may lead one to identify with and become attached to the place where this restoration occurs. However, studies have not yet linked this connection between place attachment and restoration to the potential for future restorative experiences to determine if places similar to the place of restoration and attachment can produce a similar restorative effect on a person. While studies have found that people can become
attached to a type of setting or settlement, it has not yet been determined if the restorative qualities of one setting extend to other similar settings within that settlement category. This is what the present study will do. In particular, this study will investigate whether natural environments are perceived as most restorative by all people regardless of background or whether the preference for level of nature in and type of potentially restorative setting varies according to the type of settlement and the level of nature in the place one is most attached to. In order to further test the idea that one can become attached to categories of settings, the present study will focus on attachment to mid-size places – cities, towns, and communities This study will use a modified version of the Perceived Restorativeness Scale (PRS), developed by Hartig et al. (1996), to measure Perceived Restorativeness Potential (PRP) with the modifications by Herzog et al (2003). Participants will rate different images of a variety of settings (rural, suburban/small town, and urban) on how restorative they seem as well as on the four elements of ART. Participants will also be asked to identify the place they are most attached to and to indicate how rural, suburban/small town, or urban it is. If perceived levels of restorativeness of environments with different degrees of natural vs. built environments do vary depending on the type of environment a person is most attached to, mean PRP scores would be different between the groups of people most strongly attached to a rural, suburban, or urban place. In contrast, if, as would be predicted by the Biophilia Hypothesis, all people find places with the most nature most restorative, mean PRP scores would be the highest for rural settings in comparison to suburban/small town or urban regardless of the type of environment a person is most attached to.
Method

Participants

The sample consisted of 93 undergraduate students. Participants were recruited from Macalester College psychology classes and the greater Macalester student body, as well as through a Facebook event advertising the study.

Design

This study employed a 3 X 3 mixed factorial design in which Setting of Strongest Place Attachment (urban; suburban/small town; rural) was a between-subjects independent variable, Type of Potentially Restorative Environment Image (urban; suburban/small town; rural) was a within-subjects independent variable, and Perceived Restorative Potential (PRP) was the dependent variable.

Materials

Stimuli were 15 images of potentially restorative settings (obtained from a Google images search), five of each type of setting (urban, suburban/small-town, rural) with the corresponding level of nature (see Figure 1). The images of urban settings contain mostly built environment with tall buildings and very little nature, as in a downtown area. The images of suburban or small-town settings contain some built environments with the buildings of less height with more space in between them and some nature. The images of rural settings contain all or almost all nature. Three different orders of pictures were created, and a Latin-square design was used to counterbalance these orders across participants.

A modified version of the Perceived Restorativeness Scale (PRS) developed by Hartig et al. (1996) was used to measure PRP with the modifications of Herzog et al. (2003) (see Appendix). The scale begins with an instruction to imagine oneself in a mentally fatigued state.
after concentrating on a project, and asks participants to rate the subsequently presented images on how good a place they think it would be to take a break and restore their ability to work. The participants completed this rating on a 7-point Likert scale of 0 to 6 (0 = not at all and 6 = very much). The participants were then also asked to rate the images on the single-item statements developed by Herzog et al. (2003) designed to measure the four aspects of ART (see Appendix), which have internal-consistency coefficients above 0.85, all but one exceeding 0.90. These items were also assessed on a 7-point Likert scale (0 = not at all; 6 = very much) reflecting the degree that the statement fits with their opinion of the given image. These ratings were combined into one PRP score for each type of image for each participant.

**Procedure**

Participants clicked on a link from an e-mail or Facebook event that directed them to the online study. After reading the consent form and choosing to continue, participants were asked to answer a short demographics questionnaire requesting identification of age, gender, and year in school. They were also asked to provide the last digit of their phone number, which was used to randomly assign them to one of the three orders that the images were presented in. They were then presented with information on the screen from the PRS that instructed them to imagine themselves in a fatigued state of mind. They then rated each of the 15 settings (five of each setting type) shown separately on how good a place they thought it would be to take a break and restore their ability to work effectively on a project. They also rated each setting on the four elements of ART by completing the PRS questionnaire for each image. After assessing the last image, the participants were directed to identify the place that they felt most strongly attached to. They were given Korpela et al. (2001)’s definition of a “favorite” place: “that one place in which you have most enjoyed spending time, or that you have valued being in more than any other
place. Perhaps you view this place as being particularly significant in your life” (p.579). They were asked to give a brief description of the place and to then to classify it as urban, suburban/small-town, or rural by placing it on a 9 point scale (1 = most rural, 5 = small/town suburban, and 9 = most urban). Each participant’s session took around 20 minutes to complete.

Results

Results were analyzed using a two-way repeated-measures analysis of variance (ANOVA). As shown in Figure 2, this analysis revealed a main effect of Image Type, F(2, 90) = 46.5, p < .001. Post-hoc t-tests indicated that the PRP score for the Rural Image Type (19.3) was greater than the PRP score for the Suburban/Small Town Image Type (15.5), t(92) = 7.47, p < .001, and the PRP score for the Suburban/Small Town Image Type was greater than the PRP score for Urban Image Type (11.7), t(92) = 5.55, p < .001.

As shown in Figure 3, an interaction of Image Type X Setting of Attachment was also observed, F(2, 90) = 21.8, p < .001. Post-hoc t-tests indicated that for participants who indicated that they were most strongly attached to a Rural Setting, PRP scores for Rural Images (21.0) were higher than PRP scores for Suburban/Small Town Images (15.6), t(50) = 8.60, p < .001, and PRP scores for Suburban/Small Town Images were higher than PRP scores for Urban Images (9.43), t(50) = 8.86, p < .001. For participants who indicated that they were most strongly attached to a Suburban/Small Town Setting, PRP scores for Rural Images (17.6) were not significantly higher than PRP scores for Suburban/Small Town Images (15.7), t(21) = 1.91, p = .070, but PRP scores for both Rural and Suburban/Small Town Images were higher than PRP scores for Urban Images (11.5), t(21) = 3.96, p = .001, t(21) = 3.85, p = .001, respectively. Finally, for participants who indicated that they were most strongly attached to an Urban Setting, there were no significant differences between PRP scores for Rural Settings (16.7) and Urban
Settings (17.5), \( t(19) = .406, p = .689 \), between Rural Images and Suburban/Small Town Images and (14.7), \( t(19) = 1.69, p = .107 \), or between Suburban/Small Town Images and Urban Images, \( t(19) = 1.79, p = .089 \).

**Discussion**

This study was designed to test whether natural environments are perceived as most restorative by all people regardless of background or whether preference for type of potentially restorative setting varies according to the type of settlement and the level of nature in the place one is most attached to. One possible answer to this question, following from the Biophilia Hypothesis, was that rural settings, those with the highest level of nature, would be found most restorative by all participants regardless of the setting of their place attachment. Another possible answer was that the restorative value of a setting has more to do with a person’s preferences and attachments to similar places than simply the degree of nature found in the setting. Results revealed that both of these alternatives were supported, with support found for the Biophilia Hypothesis moderated by place attachment.

Results revealed a main effect of Image Type where rural images were consistently rated the highest across conditions, as well an interaction of Image Type X Setting of Place Attachment. Images of rural settings were rated higher than suburban/small town and urban settings when examining preference for restorative settings in participants overall, but variation emerged when separating participants by the setting of their strongest place attachment. Those who were most strongly attached to a rural setting rated rural images higher than suburban/small town images and suburban/small town images higher than urban images, those who were most strongly attached to a suburban setting rated rural images similarly to suburban/small town images, but both as higher than urban images, and those who were most strongly attached to an
urban setting rated all types of images similarly. In other words, the preference for rural images was highest for those who were most strongly attached to a rural setting, less for those who were most strongly attached to a suburban setting, and non-existent for those who were most strongly attached to an urban setting.

The types of places participants described as their favorite places ranged widely and included college campuses, beaches and lakeshores, coffee shops, residences of family and friends, parks, cities, towns, geographical regions, graveyards, and dance clubs. As such, results further support Compatibility, the component of Attention Restoration Theory that encompasses the degree to which there is a fit between the opportunities that a setting offers and the desires of what a person is trying to accomplish or would like to do, as an important factor in how restorative a person finds a setting. They also lend further support for the existence of Feldman’s (1990) notion of settlement-identity, the psychological bonds with a certain types of setting or category of place.

However, the present findings come with a few caveats. The number of participants who felt most strongly attached to a rural setting was almost twice the number of participants who felt most strongly attached to a suburban or urban setting. This could be interpreted as further support for the Biophilia Hypothesis, as more people felt an affiliation to natural settings, but future studies could improve the strength of these results by recruiting an equal number of participants who are attached to each category of setting type. Additionally, since participants were asked to identify the place they feel most strongly attached after they had rated the series of images on their potential for restorativeness, participants may have been primed to think of restorative places and about the differences between rural, suburban/small town, and urban environments as opposed to just places that they feel a strong attachment to. However, the
participants were provided with a definition of place attachment and still gave a wide range of answers indicating that the question did in fact measure setting of strongest place attachment, especially since they were also asked to classify how rural, suburban, or urban the setting was. Therefore, it is not likely that viewing images prior to indicating place attachment influenced the present findings.

These results indicate that people vary in the types of places that they find most restorative and that previously developed place attachments affect what sorts of places they will prefer to refresh and restore themselves in the future. This is useful knowledge for both the individual and for architectural and community planners who may be designing spaces so that college students, workers, or community members can easily access a space in which to restore their mental capacities. It is important to remember that while settings high in levels of nature are restorative across the board, urban settings can also be restorative for those who are most strongly attached to them and that preference for type of restorative setting varies by the setting of an individual’s place attachment.
References


Figure 1. Examples of urban (A), suburban/small town (B), and rural (C) setting images.
Figure 2. PRP scores as a function of Image Type.
Figure 3. PRP scores as a function of Image Type and Setting of Strongest Place Attachment.
Appendix

Revised Perceived Restorativeness Scale (PRS) items (Herzog et al., 2003):

“Recall one of those times when you worked hard on a project that required intense and prolonged effort. Remember how it felt. You probably reached a point where you could tell that your ability to work effectively had started to decline and that you needed a break. You needed to do something during the break that would restore your ability to work effectively on the project. Put yourself in that mind set now and then please rate each of the settings you will be shown on how good a place you think it would be to take a break and restore your ability to work effectively on the project.”

*Being away:* “Some settings allow you to feel like you are far away from everyday thoughts and concerns. How much does this setting allow you to get away from it all, relax, and think about what interests you?

*Extent/Coherence:* “Some settings, large or small, can feel like a whole world of their own, where you can get completely involved in the setting and not think about anything else. How much does this setting feel like a world of its own?”

*Fascination:* “How much does this setting draw your attention without effort and easily engage your interest?”

*Compatibility:* “How much does this setting make you feel comfortable and at ease?”