

UNDERSTANDING RECREATIONAL EVENTS AND RESTORATIVE CHARACTER AT THE U.S. COAST GUARD ACADEMY

Jason M. Siniscalchi, Ph.D.
Leadership Development Center
U.S. Coast Guard Academy
New London, CT 06320

Abstract.—Students at the United States Coast Guard Academy have responsibilities and stressors beyond those of traditional university students. However, no data exist to identify what type of stress students recognize in themselves, and, once assessed, what restorative techniques they use to effectively mitigate those stressors. To help understand the phenomenology of stress and its mitigation, students were asked to identify their stressors and evaluate their restorative experiences based on both the factors of the Attention Restoration Theory and psychological benefits of recreation. Results of a factor analysis of benefits related to highly restorative events provided support for the theoretical factors of Attention Restoration Theory. Suggestions to incorporate Attention Restoration Theory in U.S. Coast Guard training are provided.

1.0 INTRODUCTION

The ability to “Lead Self” is one of the four major categories in the U.S. Coast Guard’s (USCG) leadership development framework. Included in this competency is the ability to manage one’s overall health, well-being, and stress. In training future leaders, the U.S. Coast Guard Academy (CGA) promotes stress management but has not historically implemented any programs that focus on psychological restoration to improve health. Adding to this, CGA students are continually being pulled in multiple directions both as high-achieving students and as military officer candidates (Gold & Friedman, 2000). Combined, these two roles can lead to increased levels of stress. It is not known how students manage

this stress and yet effective stress management is vital to their success as future leaders.

Many courses conducted at the CGA focus on stress management and encourage students to learn and practice stress-reducing techniques. However, no data exist to identify what type of stress students recognize in themselves, and, once assessed, what restorative techniques they use to effectively mitigate those stressors, a significant gap in the literature.

In an effort to better understand the phenomenology of stress and its mitigation in students of the Officer Candidate School, data were collected from students during the winter and spring of 2007. This paper will focus on one aspect of the larger study: restoration. Specifically, this paper sought to answer the following questions:

- What stressors do students recognize?
- What are the most effective restorative techniques utilized by students?
- What is the role of activity and setting in restoration?
- What is the relationship between psychological benefits of restoration and efficacious restorative experiences?

2.0 LITERATURE REVIEW

Officer candidates at the CGA have responsibilities beyond those of traditional university students. In addition to academic rigor, Gold and Freeman (2000) identify several unique and significant stressors that CGA students routinely face: rigorous physical fitness requirements, disciplined compliance to authority, and a highly regimented lifestyle. Military academies support a healthy lifestyle (Cannon-Bowers & Salas, 1988) to help students cope with these additional stressors.

Hans Selye (1956), founder of the scientific study of stress, proposed that, if not mitigated through enjoyable recreational and leisure activities, stress could cause irreparable physical and psychological damage. Accordingly, research on stress-coping strategies employed by students of military academies identified that well-being activities (nutrition and physical activity) had the strongest relationship to positive stress management (Gibson and Myers, 2000). Additionally, the director of counseling at the Center for Counseling and Development at the CGA suggests that many stress-reduction tactics are geared toward physical activity, e.g., exercise, playing sports, and sleeping (Murray, personal communication, Aug 14, 2007). However, Fredrick Law Olmstead suggested the physical or exertive qualities of activities alone may not be sufficient to alleviate stress:

“All forms of recreation may, in the first place, be conveniently arranged under two general heads. One will include all of which the predominating influence is to stimulate exertion of any part or parts needing it; the other, all which cause us to receive pleasure without conscious exertion. Games chiefly of mental skill, as chess, or athletic sports, as baseball, are examples of means of recreation of the first class, which may be termed that of exertive recreation, music and the fine arts generally of the second or receptive division” (Sutton, 1971, p. 73).

Why would Olmstead note this distinction between exertive and receptive forms of recreation? This answer may be found in the definition of recreation. Hammit (2005) challenges us to re-examine the definition of the term. The word has been traditionally interpreted as a ‘re-creation’ of something lost in a person but may be better represented through its etymological roots of ‘restoration or recovery’. In this light, recreation is metaphorically similar to sharpening a dull pencil rather than destroying the pencil and creating a new one. This metaphor refers to information transfer between a person and their environment. As more attention is directed toward something, more burden is placed on information

processing and mental fatigue sets in (i.e., the pencil becomes dull). It is only through the involuntary attention of events that we have a reprise from the taxing burden of directed attention and can recover (i.e., sharpening the pencil).

Attention Restoration Theory (ART) suggests certain that experiences afford restoration more than others (Kaplan, 1995). Unlike the physiological manifestations of stress as described by Selye’s (1956) General Adaptive Syndrome, ART focuses on the factors leading to the stress response, not the response itself. In particular, the focus is on the role of the perceptual system as it pertains to performance. With extended periods of directed attention, performance decreases as the body tries to cope with the perceptual strain. Restorative experiences occur with periods of undirected attention, allowing for recovery from this strain, resulting in optimal performance opportunities.

Kaplan (1995) identified four components of ART: being away, extent, fascination, and compatibility. The most basic consideration, ‘being away’ can occur physically, by geographically moving, or conceptually, through a wandering mind. However, as Kaplan et al. (1998) point out, being away is not enough and can contribute to mental fatigue (e.g., attending a conference with coworkers even if the location is desirable). The experience needs to have ‘extent’, i.e., be of a sufficient scope to be perceived as holistically new and allow for exploration. Extent can be physically created through environmental design or psychologically created as when absorbed in a book. The experience should involve ‘fascination’, or include interesting places or things that afford thinking and wondering. Lastly, to be restorative, an experience needs compatibility. There should be connection between what the environment offers and the expectations of the recreationist. For example, if an individual wants to complete a project but a critical piece is missing, hindering its completion, or if someone wishes to relax outdoors but there are mosquitoes, they will have less effective restorative experiences because their goals are blocked and there is a disconnect between expectation and experience.

2.1 The Restorative Event

The focus on directed attention and restoration is based on recreational experiences. The Recreation Production Process (Driver & Brown, 1978) states that the immediate output of recreation is an experience which leads to any number of psychological, health, environmental, social, personal, or economic benefits. Conversely, the experience and corresponding benefit(s) are dependent on two inputs: activities and settings. Based on economic principles, the Production Process promotes managing these inputs for the desired outcomes.

The literature is mixed regarding the value of the activity versus the value of the setting with regard to restoration (Bodin & Hartig, 2003, Hull & Michael, 1995). In a meta-analysis of activity and setting-based benefits, Pierskalla et al. (2004) identified four categories of benefit attainment: (1) activity-based benefits; (2) setting-based benefits; (3) activity and setting-based benefits; and (4) elusive benefits (those benefits that were not significantly linked with activity and setting). They proposed a new class of inputs combining activities and setting together as “events” through the use of a preposition. For example, rather than managing for an activity (e.g., jogging) or setting (Academy grounds) alone, they suggest that capturing whole event, e.g., jogging *around* the Academy grounds, may be more valuable. Using the restorative definition of recreation, this research sought to understand the perceived recreational events related to restoration and their relationship to the psychological benefits of these events.

3.0 METHODOLOGY

During the winter of 2006-2007 and spring of 2007, two classes incorporating 137 officer candidates at the CGA were asked to complete a survey about the factors that contributed to their stress at CGA and what they did to help alleviate the stress they identified. Students were asked to create a list of (maximum 10) current life stressors based on a modified version of the Subjective Units of Disturbance Scale (SUDS; Wolpe, 1990), e.g., ‘too much homework’, ‘argument with a sibling’, ‘friend is sick’, etc. Students then rated the amount of mental distress that these stressors

caused on a scale from 1 (very little stress) to 100 (extremely stressful).

Next, students were asked a series of questions about the activities and settings they employed to help relieve stress. To quantify these restorative events, students utilized the activity-preposition-setting format as described by Pierskalla et al., (2004), by listing a maximum of three of their most common restorative events. Examples of common restorative events included: jogging *around* the Academy grounds, reading *in* the library, sleeping *on* my bed, and praying *inside* the chapel. This method of describing recreational events allows for a systematic manner of data collection, a common unit of analysis, and an understanding of context (given that real-time assessments were not used).

After each restorative event, students provided a qualitative narrative about why they specifically chose to partake in that event to reduce stress. They then answered a series of questions about the specific components of restorative character based on its theoretical factors as described by Laumann et al., (2001):

- I feel I am in a different setting than usual (Novelty-physically being away)
- I feel I am away from my obligations (Escape-psychologically being away)
- I feel I am in a whole other world (Extent)
- I feel I am absorbed in these surroundings (Fascination)
- There is congruence between what I like to do and these surroundings (Compatibility)

Next, to further understand why they engaged in a particular restorative event, students were asked to rate the benefits of the experience based on the list of benefits suggested by Driver and Cooksey (1980). Finally, to help validate the role of events as a recreational input, students were asked, while participating in the restorative event, which was more important in providing stress relief: the activity, the setting, or the activity and setting combined (the event).

4.0 RESULTS

4.1 Student Characteristics

Officer candidates were the population of study at the CGA. Upon entrance to Officer Candidate School, officer candidates, usually recent college graduates, begin a highly restricted military lifestyle. They are kept on a supervised diet and physical wellness program, are vigorously reprimanded when they err in military bearing or behavior, and have limited contact with family prior to graduation which occurs 17 weeks after entrance into the program. Upon graduation, they are commissioned officers in the USCG. Students were predominantly male (76 percent, n=96), Caucasian (71 percent, n=89), and in their mid-20s (Mean=26.5, SD=3.0 years old).

4.2 Stressors

Students identified a number of stressors that inhibit their daily routine as they train to become officers. Multiple stressors were sometimes added to the same category; for example “studying for tests” and “too much homework” were categorized under “Academic concerns”. The most common stressors were academic concerns (e.g., too much homework; 69 percent, n=94), being away from friends and family (45 percent, n=61), personal/family concerns (e.g., going through a divorce; 42 percent, n=57), and stress related to transferring (e.g., what their first assignment as a Coast Guard Officer would be like; 35 percent, n=48). Regarding magnitude of stress, the length of Officer Candidate School (OCS) was the most distressing (Mean=81.7, SD=17.2), followed by being away from friends and family (Mean=67.7, SD=24.1), OCS staff concerns (Mean=66.4, SD=20.2), fatigue (Mean=66.2, SD=19.1), time management (35.9, SD=22.0), and lack of privacy (Mean=64.7, SD=23.2).

4.3 Restorative Events

Noting the varied categories of stressors, students reported a myriad of stress mitigation techniques. These mitigation techniques were divided into three categories: techniques where the activity was more important than the setting (activity), techniques in which the setting was more important than the activity (setting), and techniques where both were equally

important (event). As seen in Figure 1, just over half of all stress mitigation techniques were dependent on the activity itself, regardless of where it was performed. The setting was more important than the activity in nearly 10 percent of the techniques and both setting and activity (event) were equally important in about 40 percent of all stress mitigation techniques.

After creating a composite score of restoration by averaging the five factors of ART, overall psychological restoration was compared across the recreation inputs using a one-way ANOVA with the Scheffé post hoc test (Figure 2). Stress management

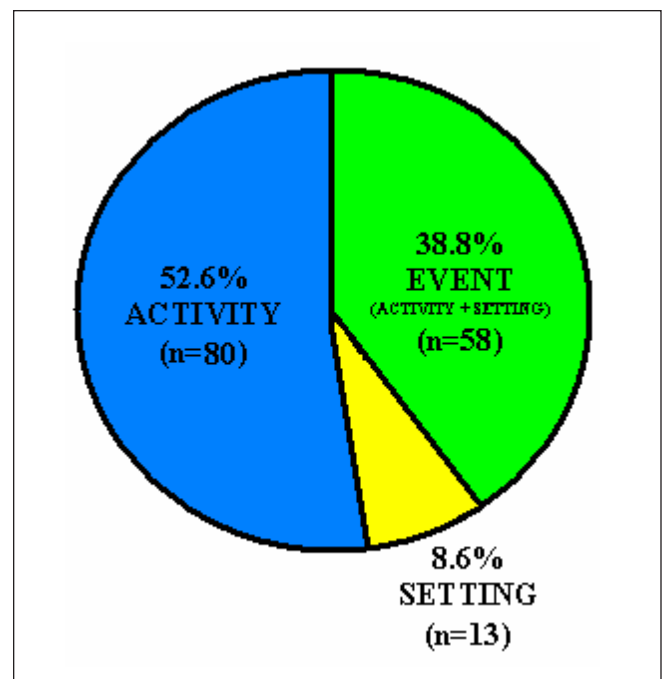


Figure 1.— Distribution of recreational inputs.

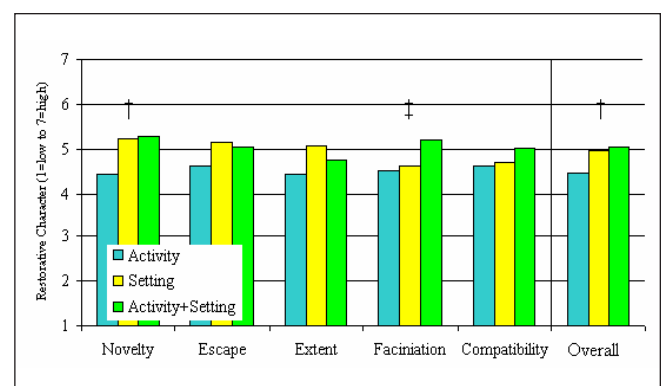


Figure 2.— Restorative character of recreational inputs.

† p<0.005, setting and event (activity and setting) > activity
‡ p<0.005, event (activity and setting) > activity and setting

techniques that were dependent on the setting (either setting alone or an activity performed at specific setting) tended to have a higher degree of restoration than stress mitigation techniques based solely on the activity with no regard to the setting. Specifically, setting and event-based restorative experiences were rated significantly higher on the ART factor of novelty (being physically away from the stressor, $F(2,149)=4.7$, $p=0.010$). Additionally, event-based experiences were rated significantly more fascinating (experiences that involve interesting places or things that afford thinking and wondering) than experiences that were based solely on the activity or setting alone ($F(2,148)=3.7$, $p=0.026$). Collectively, this suggests that activities done for the sake of the activity alone to reduce stress are not as effective as activities done at a specific place.

Since events were fairly prevalent and tended to elicit the highest restorative response from students, they were used as the unit of analysis for the next steps of the analysis. Dividing overall restorative character into highly restorative (items scored rather much, very much, and completely restorative) and slightly restorative (items scored rather little, very little, and not at all restorative), less than one-third of all restorative events were identified as highly restorative (28 percent, $n=27$). Proportionally, praying elicited the highest number of high restorative experiences (38 percent, $n=3$), particularly when the activity took place in the chapel. The highest *frequency* of restorative experiences, 27 percent ($n=7$) was jogging/running, particularly when performed outside the Academy grounds. All sleeping experiences took place in the students' beds though few were reported to have high restorative value (24 percent, $n=3$). Finally, 13 percent ($n=3$) of students reported high restorative experiences while exercising/working out. Exercising outside of the Academy was considered to be more restorative (50 percent, $n=1$) than exercising in the Academy gymnasium (10 percent, $n=20$).

Students also reported many other restorative experiences, including communicating (talking or joking with friends and family), listening to music, having personal time, playing sports, and reading.

They also reported attempting to relieve stress by sitting in a car, swimming in a pool, and watching movies in a theater. These events were not commonly utilized by students, but they were effective at reducing stress; nearly half of these events were rated as having high restorative value (44 percent, $n=8$). These data suggest that the most effective restorative events tend to be personalized and take place in familiar and enjoyable places distinct from the source of the stressor.

4.4 Factor Analysis of Psychological Benefits of Highly Restorative Events

An exploratory factor analysis identified three distinct characteristics of highly restorative events: fascination, escape, and interaction. These factors were overlaid onto a two-dimensional representation of the benefits using multidimensional scaling (Figure 3). As expected from ART, highly restorative events should afford fascination. In the context of psychological benefits, fascination refers to physically or psychologically fixating on a task. Psychological benefits related to this domain included achievement (factor loading=0.80), learning/discovery (0.80), nostalgia (0.80), exercise (0.72), seeking stimulation (0.67), creativity (0.60), and a lack of physical rest (-0.60). One example comes from a student who found restoration while talking on a cell phone in the Academy's Robert Crown Park: "It feels like I am in another place; not OCS. Sitting under the trees and watching the water is so serene." This component explained 36 percent of the total variance with an eigenvalue of 8.6.

Another fundamental concept of ART is that restorative events afford escape by removing the person, either physically or mentally, from the source of distress. Explaining 12 percent of variance (eigenvalue = 2.9), the psychological benefits related to this factor included escaping daily routine (factor loading=0.91), privacy (0.88), escaping role overloads (0.77), slowing down mentally (0.56), introspection (0.55), and escaping physical pressures (0.50). This factor tended to have the highest ratings of restoration and student comments supported this finding. One student said about watching a movie at a theatre (an event of high restorative value) "[I can] escape and

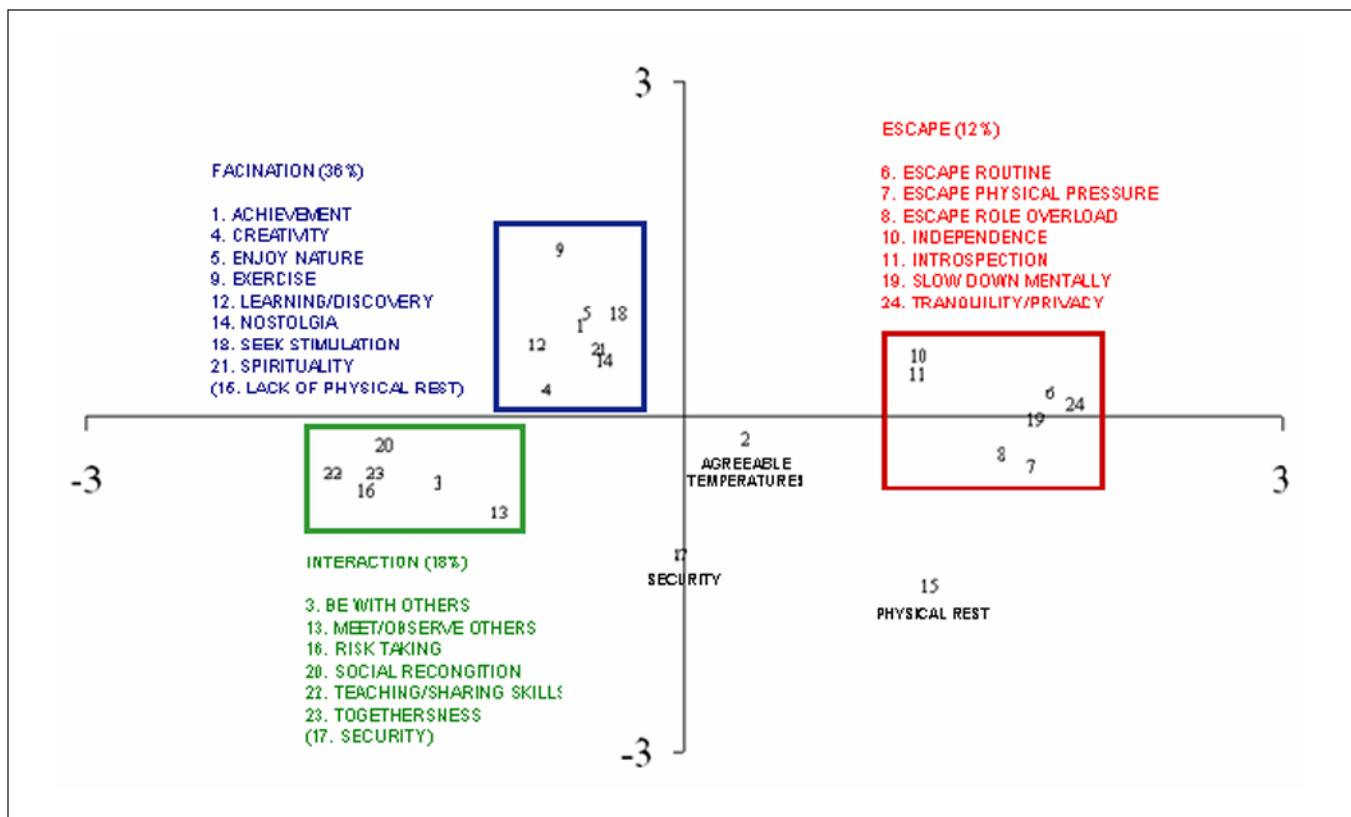


Figure 3.— Relationships among psychological benefits of highly restorative events. Note: Percents are the amount of variance explained in the three factor model based on a factor analysis with VARIMAX rotation. Benefits in parentheses are items derived from the factor analysis but not congruent to the two dimensional multidimensional scaling output (though they may be related in higher dimensions).

usually if I am in a mood, it improves.” Another student indicated that while driving, they could be away from the pressures of the Academy: “My car is the one place I can go, and I know I can get escape from here for a while. I can be me again and I love to drive.” Lastly, several students mentioned the value of jogging off campus. “Takes me away from the CGA campus and allows me to clear my head while getting a good workout”. Escaping a stressor does not have to happen off campus, however. Praying in the chapel was a common means of escape at the Academy: “It keeps my spirituality alive, and helps me get away from the stress and strain of OCS”. Psychological escape was also achieved by reading in one’s bed: “Reading and quiet reflection time to help me make sense of the seemingly ridiculous environment I find myself in, what I am doing, and where I am going.”

Lastly, and surprisingly, several highly restorative events were related to social interaction (18 percent of variance, eigenvalue = 4.3). These included being with other people (factor loading=0.93), togetherness (0.93), social recognition (0.75), sharing skills (0.74), and meeting other people (0.68). Many students utilized communication as a tool for restoration: “It allows for me to relate with shipmates and provide guidance which is relaxing and stimulating,” and, “It relaxes me, knowing my kids and wife are doing fine”. This factor is not present in ART but may be an artifact of the military environment where students have limited temporal and spatial freedoms to engage in recreation, particularly off-campus recreation, as a coping strategy. Instead, many must rely on each other, and to a limited extent, outside friends and family, to talk, laugh, get social support, and commiserate in an effort to relieve stress.

5.0 DISCUSSION

Officer candidates understand that stress is an integral part of their training. As new officers on active duty, they will be faced with a range of stressful situations and their experiences in OCS will help prepare them to handle the unknown. By being taken to their breaking point and surviving, students gain insights about themselves and their capabilities, and gain confidence to face future adverse situations by reflecting on the difficulties faced during their training.

However, too much stress, e.g., reaching the ‘breaking point’, can cause both physiological harm and mental fatigue, neither of which supports high performance. If a goal of training is to push students to the edge and later have them reflect on this achievement, time should be invested to help them along the journey by allowing them to realize what their stressors are, understand how they react under pressure, and determine what restorative events are effective.

These results suggest that the traditional military notion of relying heavily on either exercise or sleep (i.e. activities) to reduce stress, may not be the most effective strategy. Most of the restorative experiences reported by the students in this study included specific settings, which suggests that recreational events should be encouraged as a means of reducing stress. This study also provides additional evidence supporting the theoretical components of ART. Two of the three factors that emerged from a factor analysis of the psychological benefits of highly restorative events were directly related to the ART factors “being away” and “fascination.” The third factor, “social interaction”, is likely an artifact of the CGA students’ regimented lifestyle.

To help effectively help mitigate stress, there should be opportunities for students to physically leave the site of the stressor and become actively engaged in a “hands-on” learning experience. Academy scheduling should also allow for and encourage social interaction between students in a non-stressful environment, which can also promote social cohesion, teamwork, and collaboration.

Lastly, these data suggest that events (rather than activities and settings by themselves) are the appropriate unit of analysis for measuring restoration. Over one-third of the stress-mitigation strategies identified by students in this study incorporated both the activity and setting. In addition, encouraging students to use narratives to describe restorative experiences allowed them to provide more information about the context and the effects of the experience.

6.0 CONCLUSIONS

At the CGA, improving everyday health and well-being is a vital part of developing future leaders. CGA students should be cognizant of what stress reduction events work best for them in order to make the best use of their limited free time. One suggestion is that the CGA could use facilitated workshops to make students aware of stress and time management techniques. These could include ART, meditation, and mental imagery. Similar programs would also benefit students at nonmilitary institutions seeking to improve their overall academic performance and psychological well-being. Additional research should be conducted to help further understand the nuances of ART as a tool for stress management at the Academy and nonmilitary institutions.

7.0 CITATIONS

- Bodin, M. & Hartig, T. (2003). **Does the outdoor environment matter for psychological restoration gained through running?** *Psychology of Sport and Exercise*, 4(2): 141-153.
- Cannon-Bowers, J.A. & Salas, E. (Eds.). (1998). **Making decisions under stress: Implications for individual and team training.** Washington, D.C.: APA Books.

- Driver, B.L. & Brown, P.J. (1978). **The opportunity spectrum concept and behavioral information in outdoor recreation resource supply inventories: A rationale.** In Integrated inventories and renewable natural resources: Proceedings of the workshop (pp. 23–31; USDA Forest Service General Tech. Rep. RM-55). Fort Collins, CO: Rocky Mountain Forest and Range Experiment Station.
- Driver, B.L. & Cooksey, R.W. (1980). **Preferred psychological outcomes of recreational fishing.** As cited in Driver, B.L., Tinsley, H.E.A., & Manfredo, M.J. (1991). The paragraphs about leisure and recreation experience preference scales: **Results from two inventories designed to access the breadth of the perceived psychological benefits of leisure.** In B.L. Driver, G.L. Peterson & P.J. Brown (Eds.), *Benefits of Leisure* (pp. 263-286). Venture Press, State College, PA.
- Gold, M.A. & Friedman, S.B. (2000). **Cadet basic training: An ethnographic study of stress and coping.** *Military Medicine*, 165, 147-152.
- Hammitt, W.E. (2005). **A Restorative Definition for Outdoor Recreation.** In: Bricker, Kelly, comp., ed. 2005. Proceedings of the 2004 Northeastern Recreation Research Symposium. Gen. Tech. Rep. NE-326. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northeastern Research Station, 1-5.
- Hull, R.B. & Michael, S.E. (1995). **Nature-based recreation, mood change, and stress reduction.** *Leisure Sciences*, 17, 1-14.
- Kaplan, R., Kaplan, S. & Ryan, R.L. (1998). **With people in mind: Design and management of everyday nature.** Washington, DC: Island Press.
- Kaplan, S. (1995). **The restorative benefits of nature: Toward an integrative framework.** *Journal of Environmental Psychology*, 15, 169-182.
- Laumann, K., Gärling, T., & Stormark, K. M. (2001). **Rating scale measures of restorative components of environments.** *Journal of Environmental Psychology*, 21, 31-44.
- Pierskalla, C.D., Lee, M. E., Stein, T.V., Anderson, D.H., & Nickerson, R. (2004). **Understanding relationships among recreation opportunities: A Meta-Analysis of nine studies.** *Leisure Sciences*, 26, 163-180.
- Selye, H. (1956). **The stress of life.** New York: McGraw-Hill.
- Sutton, S.B. (Ed.). (1971). **Civilizing American cities: A selection of Fredrick Law Olmstead's writings on city landscapes.** Cambridge, MA: The MIT Press.
- Wolpe J. (1990). **The practice of behavior therapy** (4th ed.). New York: Pergamon Press.