

# Stress Management and the Motives of Restorative Events at the United States Coast Guard Academy

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The United States Coast Guard Academy seeks to develop leaders of character to become officers and manage its numerous missions. During training, cadets receive multiple stressors from their academic, military, and athletic responsibilities, not to mention the social stressors of friends and family. To become leaders of character, cadets need to effectively manage these stressors. This study reviewed cadets' motives leading to effective and noneffective stress management techniques they employed. During the winter of 2008, cadets described their stressors and stress reduction techniques (restorative events) and evaluated their efficacy based on the

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factors of attention restoration theory (ART). Discriminant analysis identified several motives associated with restorative events; however, many of the common events employed by cadets did not include components of ART, indicating that these events may not be effectively mitigating stress. A follow-up logistic regression indicated that stress reduction was based on restorative events performed to escape routine and role overloads, provide achievement, teach or share skills, and enjoy nature. Events affording low restoration involved motives of physical rest, learning, and physical fitness. Recommendations to improve cadets' stress management are discussed.

The life of a college student is full of stressors stemming from the need to achieve high academic performance, maintain social relationships, and partake in extracurricular activities (Kadison & DeGeronimo, 2004). Because part of the Academy's mission is to develop cadets into both effective leaders and future service-ready officers military students, cadets at the United States Coast Guard Academy (USCGA) have the additional responsibilities of performing military duties above those of traditional college students (Gold & Friedman, 2000). These military requirements add another layer of stress beyond that of the typical college student. A recent report of the cadet climate at the USCGA described the Academy as "a stressful environment [which] can be emotionally unhealthy" (U.S. Coast Guard, 2007, p. 96) and indicated that cadets have reported a rise in using stress coping methods not approved by the command, such as alcohol or substance use.

To provide healthier choices to aid students in stress management, military academies endorse a healthy lifestyle to help students cope with these additional stressors (Cannon-Bowers & Salas, 1998), particularly focusing on exercise and nutrition. Due to the rigorous physical training and health standards at the USCGA, cadets tend to meet this goal physiologically. However, the psychological health of military students may not be at same level as their physiological well-being (U.S. Coast Guard, 2007). To be effective leaders of character in the fleet, USCGA cadets need to realize what stressors they face but they must be able to understand how they react to these stressors and ultimately learn what techniques work to allow them to effectively mitigate this stress.

## STRESS AND LEADERSHIP

Students under high levels of mental duress have a lower self-efficacy or confidence in their ability to organize and execute a course of action to attain a goal (Bandura, 1997). Smith and Cooper (1994) noted that cadets need to be able to effectively recognize and manage stress to be able to cope with the leadership

challenges they will meet in the fleet as an officer, including job role stressors (long work hours and work load), managerial role stressors (managing subordinates and conflict), career development stressors (promotion-related stressors), organizational stressors (not being in alignment with organization objectives), and work-home stressors (time away from home and moving). The events of 9/11 and Hurricane Katrina exemplified the importance of specific coping management strategies. Critical incident stress management has been developed to ensure the mental well-being of all Coasties to reduce the effects of posttraumatic stress disorder (U.S. Coast Guard, 2006). In short, to be effective leaders, cadets need to be prepared to handle job/mission stressors, not to mention the everyday hassles of life. Effective stress management is vital to cadet training.

### STRESS MANAGEMENT AND ATTENTION RESTORATION THEORY

The literature presents two hypotheses on stress management. The buffer hypothesis suggests that stress management copes with the negative effects of stress. Leaders need to know how they respond to stress to fully appreciate their strengths and weaknesses as leaders and improve their leadership ability, dealing with stress after it happens. Alternatively, the independent hypothesis promotes stopping stress before it enters the equation through preemptive measures. Under this framework, successful leaders will need to learn to identify stress by looking within themselves and anticipating and modifying behaviors prior to a stressful period (Iwasaki, 2003).

Traditionally, the USCGA employs the buffer hypothesis as the primary cadet stress management strategy. The director of counseling at the Center for Counseling and Development at the USCGA suggested that many stress reduction tactics are geared toward physical activity; for example, exercise, playing sports, and sleeping. These activities attempt to reduce stress already present in cadets (R. Murray, personal communication, August 14, 2007). This bias toward physiological coping strategies leads to two potential concerns: a lack of consideration of the psychological aspects of coping and a failure to consider the role of the setting. As Fredrick Law Olmstead suggested, the physical or exertive qualities of activities alone may not be sufficient to reduce stress. Forms of recreation include types that “stimulate exertion of any part or parts needing it [or those] which cause us to receive pleasure without conscious exertion” (Selye, 1956, p. 71). This quote fits with the definition of *recreation*, which seeks to afford restoration or recovery (Hammit, 2005).

Attention restoration theory (ART) suggests that certain experiences afford restoration more so than others (R. Kaplan & Kaplan, 1989; R. Kaplan, Kaplan, & Ryan, 1998; S. Kaplan, 1995). Unlike the physiological manifestations of stress as described by Selye’s general adaptation syndrome (Selye, 1956), ART focuses

on the factors leading to the stress response, not the response itself, supporting the independent hypothesis. When introduced to a stressor, one's ability to concentrate on a task is reduced because psychological or physiological energy (consciously or subconsciously) is spent focusing on the stressor. Directed attention is needed to force oneself to concentrate on the task at hand and keep out distracting thoughts. During extended conditions of directed attention, task performance decreases as the body tries to cope with the perceptual strain and caused by the maintenance of this state of focus. Conceptually, this inhibitory process is analogous to holding one's arms out while holding a 5-pound weight. Eventually fatigue will set in and the arms will drop. Recuperation can only occur during periods of undirected attention (e.g., releasing the weight), allowing for recovery from this strain, resulting in optimal performance opportunities.

Based on earlier research (R. Kaplan & Kaplan, 1989; S. Kaplan, 1973, 1983, 1995), Kaplan identified four conditions that must be met for experiences to become restorative. These conditions include *being away*, *extent*, *fascination*, and *compatibility*.

- *Being away.* One of the most basic components of a restorative experience is to be someplace different from the routine and to remove oneself from a stressful situation. Being away can be achieved physically, by geographically moving, or conceptually by allowing the mind to wander or imagine being away. However, when being away may not be enough and can contribute to mental fatigue (e.g., attending a conference with coworkers even if the location is desirable may not enable individuals to be away; R. Kaplan et al., 1998).
- *Extent.* ART also suggests that experiences need to be of a sufficient scope to be perceived as being new or different, and there is a desire to explore this new environment. Accordingly, the extent to which a restorative experience enables individuals to leave the stressful situation is an important condition within the ART framework.
- *Fascination.* ART also suggests that restorative experiences should involve interesting places or things that afford thinking and wondering. In other words, the experience has to involve properties that captivate one's attention and fascinate the individual.
- *Compatibility.* The last condition required for restorative experiences involves compatibility. That is, in order to be restorative, an experience needs to meet an individual's expectations. What the environment offers should fit the needs of what the recreationist expects. For example, if an individual wishes to relax in the outdoors but there are mosquitoes, she or he will have a less effective restorative experience because there is incongruence between an expectation and an experience.

ART suggests that the more reflection an environment affords, allowing one to think about the stressful condition, the more positive benefits should result (Herzog, Black, Fountaine, & Knotts, 1997). ART provides support for traditional stress management tactics that are cognitively oriented, such as journaling, meditation, or mental imagery (Antai-Otong, 2001; Lehrer, Carr, Sargunraj, & Woolfolk, 1994). Journaling (the process of reflecting on the day's activities through writing), meditation (the ability to clear one's mind fully and look beyond the stressor), and mental imagery (the mental visualization of being in a favorable environment or situation) allow opportunities for an experience psychologically away from a current location (or thoughts) and for self-exploration in a fascinating or autonomous, safe environment. In doing so, these activities meet the components of ART; in other words, it is the psychological component of reflection more so than the physiological need for relaxation that is the primary factor of restoration (Herzog et al.).

Considerable research using the ART framework has provided empirical support for the notion that attention restoration can serve to mitigate the effects of stress on a wide range of outcomes. People experiencing restorative environments have been shown to effect a physiological reduction in stress through electroencephalography (EEG), electromyography (EMG), and Blood Volume Pulse (BVP) values (Chang, Chen, Hammitt, & Machnik, 2007). Cancer patients have used ART as a therapy through environmental interventions to help in stress management (Cimprich, 1992, 1993). Additionally, ART has been shown to help with attention deficit disorder (Taylor, Kuo, & Sullivan, 2001) and improve children's cognition in development (Wells, 2000).

## PRODUCTION OF RECREATIONAL PROCESSES

The recreational production process states that the immediate output of recreation is an experience (such as a restorative experience) that leads to any number of psychological, health, environmental, social, personal, or economic benefits. These benefits serve as motives to seek experiential opportunities (Brown, 1984; Driver & Brown, 1978). In other words, when creating an experience, an individual will seek an activity and setting that is directed by a particular outcome, the motive (benefit). A large body of research has been conducted on the motives of the recreational experience. Such benefits include physiological benefits, the motive to improve health and wellness, including stress reduction (Baum, 1991; Ulrich, Dimberg, & Driver, 1991); educational attainment/learning, the motive to improve skills or knowledge (Roggenbuck, Loomis, & Dagostino, 1990); spirituality, the motive to understand a higher power or understand oneself and their place in the world (McDonald & Schreyer, 1991); personal/social benefits, motives to improve one's self image or social capital (Wankel & Berger, 1991);

economic-based motivations (Johnson & Brown, 1991); and motives to improve environmental conditions (Rolston, 1985).

In the production process, the experience and corresponding benefit(s) are derived from economic theory decision making; that is, a good investment is based on its favorable return. In recreation choice, the benefit (or good investment) is the improved condition sought (motive; Driver, Brown, & Peterson, 1991). The process is the basis for benefits-based management (BBM) and is currently employed across the United States at the city and county levels through federal agencies such as the Bureau of Land Management (Hurd, Barcelona, & Meldrum, 2008).

BBM builds upon two previously established recreation management models: activity-based management, which focuses only on supply (number performing an activity), and experience-based management, which extends activity-based management by considering the setting and the output of a desired psychological state. Benefits-based management and the production model add another dimension to these models by suggesting that the individuals may use the psychological experience to achieve a desired changed or improved condition (Lee & Driver, 1999).

Recent research provides evidence that activities and settings can be grouped together as a single unit of measurement, an event, and in doing so may capture and represent recreational opportunities better than just using an activity or setting alone (Pierskalla, Lee, Stein, Anderson, & Nickerson, 2004). Events are described as the result of the psychological processes formed during the interaction between an activity and setting and are performed for the particular experiences, or outcomes, they afford (Gibson, 1986). Indeed, these events have been described as "a nexus of behavioral, environmental and temporal features, as such it is important not to fragment a person in environment whole artificially by studying behaviors or environments separately" (Aitken, 1991, p. 107). Other research provides evidence that the interaction between activity and setting may be related to a more restorative experience. An individual may be more inclined to visit places that exhibit high degrees of extent and compatibility (immersive settings that support an intended activity) for optimal levels of restoration (Korpella, Hartig, Kaiser, & Fuhrer, 2001).

In summation, the production process proposes that an individual chooses to perform an activity within a particular setting (the event input) in order to elicit a particular experiential response to obtain an expected benefit that the event is hoped to provide—that is, restoration. These expected benefits serve as the motivating factors that explain why an individual chooses to seek a particular recreational experience. For example, an individual may choose to jog along a wooded trail to seek experiences to allow the individual to escape a daily routine or be with nature.

Using the ART framework and production process model, this study sought to understand cadets' motives behind choosing highly effective, and conversely least effective, restorative events to reduce their academic, social, extracurricular, and military stressors. Specifically, we sought to explore the following research questions:

1. What is the relationship between restoration and motives for events employed by cadets in coping with stress?
2. How can an understanding of these motives help improve cadet stress management at the USCGA?

## METHOD

### Participants

Data were taken from the stress management study of USCGA cadets conducted in the spring semester of 2008. E-mail solicitations were sent to the electronic mail address of the entire population of cadets enrolled at USCGA in the spring semester of 2008 ( $N = 938$ ). The e-mail solicitation described the general purpose of the study and confidentiality safeguards and included the multi-item scales described below. We obtained 606 surveys by the end of the survey period, yielding a response rate of approximately 65%. Comparison of demographic characteristics between respondents and nonrespondents did not reveal any significant differences between these groups.

Examination of the demographic characteristics of the sample indicated that cadets were predominantly male (70%,  $n = 414$ ) with an average age of 19.8 years ( $SD = 1.3$ ). The sample was primarily non-Hispanic White (94%,  $n = 535$ ) with approximately 5% Hispanic or Latino ( $n = 32$ ) and 5% Asian ( $n = 30$ ). All cadets were high school graduates (100%,  $n = 938$ ). With the exception of age and educational attainment, due to the truncated sample stemming from Academy cadets, these frequencies are not significantly different from the overall Coast Guard demographic breakdown (U.S. Coast Guard, 2009)

## MEASURES

All data were gathered electronically using VOVICI/EFM 2.2 survey software (<http://www.vovici.com>). Participants were instructed to complete the online survey after they completed the online informed consent form. The survey included several multi-item scales assessing life stress, stress-reducing activities, and motivational functions underlying stress-reduction activities.

### Stress-Reducing Events

Cadets were asked to think about current life stressors and identify methods they used to reduce these stressors—including recreational events. Specifically, cadets were asked “What types of activities and settings do you routinely utilize to help you relieve stress? These activities can be done at the Coast Guard Academy or within the region.” Next, cadets were asked to identify several aspects of the event using the following naming conventions: an activity (e.g., *jogging*), a preposition (e.g., *along*), and a setting (*wooded trail*); that is, “jogging along a wooded trail.” This convention was helpful to determine whether the unit of analysis was identified as an effective means to allow participants to describe their perceptions of a human–environment interaction (Pierskalla, Siniscalchi, Selin, & Fosbender, 2007). After identifying each of these events, cadets were asked to list up to three events they utilize to help reduce stress. Students were also asked to quantitatively and qualitatively describe why they employ these events to mitigate stress in an effort to assess validity of the factors of restorative character and motives described in the next section.

### Restorative Character

After listing each event, cadets were asked to provide narrative descriptions of why they chose to engage in each event to reduce stress. Cadets also rated the restorative quality of each event using the Restorative Components of Environments Scale developed by Laumann, Garling, and Stormark (2001). This scale assess various facets of restorative components including novelty, or physically being away (e.g., I feel I am in a different setting than usual); escape, or psychologically being away (e.g., I feel I am away from my obligations); extent (e.g., I feel I am in a whole other world); fascination (e.g., I feel I am absorbed in these surroundings); and compatibility (e.g., There is congruence between what I like to do and these surroundings) using a 7-point Likert-type scale that ranged from *not at all agree* to *strongly agree*. The scale specifically addresses each individual factor of ART and has robust psychometric properties, with reliability coefficients between 0.84–0.94 for each of the factors (Laumann et al.).

### Motivational Need

Cadets were asked to rate benefits associated with each event using 23 descriptive characteristics derived from Driver and Cooksey (1977). Specifically, cadets were asked to indicated the extent to which they sought to achieve each of the 23 outcomes (see Table 1) while performing a particular restorative event using a 7-point response scale ranging from *not at all* to *completely* (Driver & Cooksey). This scale has been shown to have adequate levels of reliability and has been



TABLE 1  
Mean and Standard Deviation for Benefits/Motives

| <i>Benefit/motive</i>        | <i>Overall<br/>(n = 619)</i> |           | <i>High<br/>Restorative<br/>Events<br/>(n = 188)</i> |           | <i>Low Restorative<br/>Events (n = 19)</i> |           |
|------------------------------|------------------------------|-----------|--|-----------|--|-----------|
|                              | <i>Mean</i>                  | <i>SD</i> | <i>Mean</i>  | <i>SD</i> | <i>Mean</i>                                | <i>SD</i> |
| Achievement                  | 4.9                          | 1.9       | 5.2  | 1.7       | 2.7  | 2.2       |
| Agreeable temperatures       | 4.1                          | 1.8       | 4.3  | 1.7       | 2.4  | 1.6       |
| Be with other people         | 4.0                          | 2.2       | 4.2  | 2.2       | 2.5  | 1.8       |
| Creativity                   | 3.8                          | 1.9       | 3.9  | 1.9       | 2.7  | 1.8       |
| Enjoy nature                 | 4.3                          | 2.2       | 4.5  | 2.1       | 2.3  | 1.8       |
| Escape daily routine         | 5.9                          | 1.6       | 6.2  | 1.2       | 2.8  | 1.8       |
| Escape physical pressures    | 4.7                          | 2.1       | 4.9  | 2.0       | 2.6  | 1.8       |
| Escape role overloads        | 5.3                          | 1.9       | 5.6  | 1.6       | 2.4  | 1.6       |
| Exercise or physical fitness | 4.8                          | 2.4       | 5.1  | 2.3       | 2.7  | 2.1       |
| Independence or autonomy     | 4.9                          | 2.0       | 5.1  | 1.9       | 2.8  | 1.8       |
| Introspection                | 4.6                          | 1.9       | 4.7  | 1.8       | 2.8  | 1.9       |
| Learning or discovery        | 4.2                          | 2.1       | 4.3  | 2.0       | 2.7  | 2.3       |
| Meet or observe other people | 3.5                          | 2.2       | 3.7  | 2.2       | 2.1  | 1.6       |
| Nostalgia                    | 3.7                          | 2.0       | 3.8  | 1.9       | 2.5  | 1.7       |
| Physical rest                | 3.6                          | 2.3       | 3.5  | 2.3       | 4.2  | 2.3       |
| Risk taking                  | 3.4                          | 2.1       | 3.5  | 2.1       | 1.7  | 1.3       |
| Security                     | 3.9                          | 2.0       | 4.0  | 2.0       | 3.2  | 2.1       |
| Seek stimulation             | 4.7                          | 2.0       | 4.9  | 1.9       | 2.9  | 2.1       |
| Slow down mentally           | 4.8                          | 2.0       | 4.9  | 2.0       | 4.0  | 2.0       |
| Social recognition           | 3.4                          | 2.1       | 3.5  | 2.1       | 2.3  | 1.8       |
| Spirituality                 | 3.5                          | 2.2       | 3.6  | 2.1       | 2.8  | 2.4       |
| Teaching or sharing skills   | 3.4                          | 2.1       | 3.5  | 2.1       | 2.0  | 1.8       |
| Togetherness                 | 3.9                          | 2.3       | 4.1  | 2.3       | 2.4  | 2.1       |
| Tranquility or privacy       | 4.8                          | 2.2       | 5.0  | 2.1       | 3.4  | 2.2       |

widely used to assess perceived benefits of restorative events (Driver & Cooksey; Graefe, Ditton, Roggenbuck, & Schreyer, 1981).

## RESULTS

Restorative events were content analyzed and categorized on the basis of activity and setting. Activities were grouped into one of four domains including physical activities (e.g., exercising, playing sports, working out), physiological activities (e.g., sleeping and eating), psychological activities (more sedentary activities

such as reading, watching television, listening to music, studying, and surfing the Internet), and social activities (talking on the phone and being with friends). In a similar fashion, settings were grouped based on area where the activity was performed and whether the activities took place in the dorms; indoors or outdoors within the USCGA grounds; off campus (not on the USCGA grounds); or in an unspecified location. This procedure enabled us to categorize each of the events on the basis of their activity and setting. Events that occurred in more than 5% of the corps of cadets were utilized for further analysis. Altogether, 845 events were included in all analyses, encompassing 82% of all reported events. The most common event involved physical activity performed outdoors within USCGA grounds (18%,  $n = 186$ ), followed by physical activity performed indoors (16%,  $n = 168$ ), physiological activities within the dorms (16%,  $n = 159$ ), psychological activities within the dorms (12%,  $n = 121$ ), physical activities performed off campus (11%,  $n = 108$ ), social activities performed anywhere (5%,  $n = 52$ ), and psychological activities performed indoors (5%,  $n = 51$ ).

Next we performed a multiple discriminant function analysis (DFA) to determine whether rating of the restorative nature and motivational benefits of recreation events would enable us to identify classes of restorative events using SPSS 15.1 (<http://www.spss.com>). Results from this analysis yielded six discriminant functions, with a combined  $\chi^2(66) = 315.3$ ,  $p < .001$ . Initial examination of the DFA results indicated that two of the six functions could be removed due to low significance ( $p < .05$ ), leaving four functions that accounted for 93% of the original between-group variability (41, 30, 13, and 9%, respectively). Using the factor loadings, each function was labeled according to the contribution of the predictor to the linear function using a cut off of  $\pm 0.300$ . Table 2 presents outcomes from the DFA.

TABLE 2  
Standardized Canonical Discriminant Function Coefficients

|                              | <i>Function (Eigenvalue)</i> |                                 |                                    |                        |
|------------------------------|------------------------------|---------------------------------|------------------------------------|------------------------|
|                              | <i>Rest (0.226)</i>          | <i>Exercising Alone (0.126)</i> | <i>Experiencing Nature (0.045)</i> | <i>Liberty (0.041)</i> |
| Novelty                      | 0.154                        | 0.073                           | 0.275                              | 0.728                  |
| Exercise or physical fitness | -0.211                       | 0.601                           | -0.135                             | 0.032                  |
| Learning or discovery        | -0.357                       | 0.135                           | 0.512                              | -0.900                 |
| Physical rest                | 0.649                        | 0.241                           | -0.461                             | -0.145                 |
| Risk taking                  | 0.027                        | 0.620                           | -0.128                             | 0.074                  |
| Teaching or sharing skills   | -0.038                       | -0.446                          | -0.776                             | 0.191                  |
| Togetherness                 | -0.288                       | -0.724                          | 0.319                              | 0.281                  |
| Tranquility or privacy       | 0.268                        | -0.249                          | 0.575                              | 0.301                  |

- *Function 1: Rest.* The first canonical function was related to the motives of physical rest and tranquility and was called *rest*. A follow up one-way analysis of variance (ANOVA) using the restorative events as an independent variable and the discriminant scores as a dependent variable indicated that the rest factor was related to physiological activities that take place in the dorm, most commonly sleep,  $F(6,654) = 29.4, p < .001$ . Sleep is the first tool used to reduce stress, but it only satisfies a physiologic need. As one cadet said,

Frankly, I have only had time this year to run, as it is a physical fitness priority. I get back from sports period and work straight until bed. I haven't slept during the day or watched a movie once this year. There is no time for anything else besides schoolwork, sports, and military obligations/division work, and I think I'm an emotional wreck because I have not had the time to relieve any of this stress.

- *Function 2: Exercising Alone.* The second discriminant function was associated with the motives of independence and physical fitness but not togetherness and was called *exercise alone*. Specific events associated with this function included working out in the gym and swimming in the pool. Cadets are required to maintain physical fitness standards and therefore have mandatory military requirements. However, cadets may attempt to utilize these required activities to reduce stress. For example, one cadet stated, "I like to stay physically active and lifting [weights] clears my mind of everything else I'm doing, especially when I get my favorite music going on my iPod." Another mentioned swimming "gets me away from people." The results of the follow-up one-way ANOVA indicated that physical activity indoors was the discriminating event for the motives of exercising alone,  $F(6,654) = 20.9, p < .001$ .
- *Function 3: Experiencing Nature.* The third discriminant function was related to the motives of enjoying nature, exercising, and escaping daily routine but not sharing skills or togetherness. This function was called *experiencing nature*. There is a large body of literature demonstrating how humans are drawn to the presence of nature, and time spent in nature is related to a reduction in the physiologic and psychological effects of stress (R. Kaplan & Kaplan, 1989; Ulrich et al., 1991). Students' comments on the reason they performed these events to reduce stress provided support for this function. Students indicated they enjoy "surrounding [them]selves with nature as this is liberating" and nature is "very relaxing." A one-way ANOVA suggested that physical activities that take place off campus are related to this function,  $F(6,654) = 8.1, p < .001$ . The primary events referred to in this category were jogging on the wooded trails outside of the campus or sailing on the Thames River.

- *Function 4: Liberty.* The fourth discriminant function included items reflecting novelty or physical escape. Additional motives associated with this function were not learning or being alone. Because this function described being physically away from everyday routine and learning, this function was called *liberty*, also known as free time for cadets. Being away is the fundamental component of ART and was succinctly described by the following cadet:

It is away from the academy and all pressures, academic, military, and physical, that being here brings inherently. Getting away and leaving everything, including the uniform behind, allows me to recharge my batteries and live like a normal person for a while.

- However, being away can also include other physiologic considerations, such as sleep, and, in fact, the events associated with this function as determined by a one-way ANOVA were physical activities that take place off campus (actually leaving the campus grounds to go home, to a sponsor family, out to a movie, etc.) and physiological activities in the dorms (sleep),  $F(6,654) = 5.6, p < .001$ .

### Motives of Restorative Events

The results of the discriminant function indicated that the motives of restorative events utilized by cadets to relieve stress tended to be related to physiological needs (e.g., sleep, fitness activities). Due to the lack of influence of restorative factors, it could be argued that cadets were not fully reducing their psychological levels of stress, which leads to the question as to what motives (regardless of the actual activity or setting) were related to high levels of restoration. To help answer this question, an exploratory logistic regression was utilized to determine which motives served as predictors of highly restorative events (events that averaged a 6 or higher across all five factors of ART). Results of logistical regression analyses indicated differences in benefits between high and low restorative events,  $\chi^2(23) = 185.5, p < .001$ ,  $-2 \text{ Log Likelihood } (-2LL) = 111.3$ , Nagelkerke's  $R^2 = 0.73$ . As shown in Table 3, highly restorative experiences were 1.4 to 1.9 times more likely when cadets were motivated to perform the event to escape daily routine or role overloads, derive a sense of achievement, teach others, or enjoy nature. Moreover, two of these motives, escape and enjoy nature, were identified in the discriminant functions analysis. The additional motives were described in greater detail by cadet reports of why they utilized a particular event to reduce stress.

By their very nature, cadets of the USCGA are intelligent, high-achieving men and women. Therefore, it is not surprising that events leading to achievement would provide motivation and the sense of satisfaction that comes with a job well

TABLE 3  
 Motives Associated With High and Low Restorative Events

|   | <i>B</i> | <i>Wald's</i> $\chi^2$ | <i>p</i> | <i>Odds Ratio (Likelihood of High Restorative Experience)</i> |
|---|----------|------------------------|----------|---|
| Experiences associated with high restorative events                         |          |                        |          |   |
| Escape daily routine  | 0.65     | 10.4                   | 0.001    | 1.9   |
| Achievement   | 0.47     | 7.1                    | 0.008    | 1.6   |
| Escape role overloads   | 0.58     | 6.9                    | 0.009    | 1.8   |
| Teaching or sharing skills  | 0.65     | 6.1                    | 0.014    | 1.9   |
| Enjoy nature  | 0.47     | 6.1                    | 0.014    | 1.6   |
| Experiences associated with low restorative events                          |          |                        |          |   |
| Physical rest   | -0.55    | 5.7                    | 0.017    | 1.7   |
| Learning or discovery   | -0.50    | 5.3                    | 0.022    | 1.6   |
| Exercise or physical fitness  | -0.35    | 4.0                    | 0.046    | 1.4   |
| Experiences derived from cadet comments on why they seek restorative events |          |                        |          |   |
| Maintain identity (high restorative events)                                 |          |                        |          |   |
| Convenience (low restorative events)  |          |                        |          |   |

done. Cadets mentioned that they can use goal setting as a means to focus their attention and psychologically remove the stressor from their minds. For example, one cadet stated, "I can block out everything about the academy and focus on making my swimming times [in the pool]; beating the clock."

When cadets are provided opportunities to instruct others, as in coaching teammates or leading club activities, it affords a highly restorative experience because they can escape their daily routine and focus on sharing their hobbies with others. Teaching others allows a cadet to be in control while building camaraderie among shipmates. One cadet said, "I love music, and this is the only opportunity I get to perform or get to share it with other people, which is what I most love to do."

Conversely, the logistic regression provided motives of events affording low levels of restoration. A cadet was 1.4 to 1.7 times more likely to achieve a low restorative experience when she or he was motivated to perform the event due to a need for physical rest, learning or discovery, or exercise or physical fitness. Considering that cadets tended to frequently employ restorative events involving sleep and physical exercise to reduce stress, it appears that these tactics may not be maximally effective in creating opportunities for undirected attention and reducing the stress they sought to mitigate.

Regarding learning or discovery, though, cadets are eager to learn new things, and they need a reprieve from their academic learning to fully relieve stress. Taking on too many additional learning opportunities without clearing their minds they can cause mental fatigue and overload. For example, one cadet mentioned, "I can't be doing homework non-stop all day long. Playing videogames allows me to turn my brain off for a while."

### Additional Motives

A content analysis of the reasons cadets provided for utilizing restorative events provided additional motives of high- and low-rated restorative events not included in the survey of 23 benefits. Highly restorative experiences were related to a need to maintain a personal identity. As a part of military training, cadets learn to work as a unified team and are, in essence, one person. Through similar haircuts, uniforms, and behavior, cadets are conditioned to work as one. In doing so, some cadets look for opportunities to break out and be themselves. For example, while playing sports on the athletic field, a cadet stated that he is allowed to “be themselves” while being a cadet usually does not allow “me to be me.” Another cadet described another way to regain self-identity: “Dancing [in Leamy Hall] is the best way for me to express myself.”

Alternatively, events motivated by convenience (i.e., the setting to perform the activity was close by) or additional learning were related to a low restorative experience. Settling on a place to do something just because it is the only or closest (or only) opportunity does not allow for the freedom of choice needed to be a truly restorative experience. Cadets commonly mentioned utilizing settings because “it’s the only private place I have” and subsequently had a low restorative experience in these locations.

## DISCUSSION

This study sought to understand the efficacy of cadets’ stress management techniques in an effort to improve cadet performance. Drawing on complementary approaches from ART and the production model we sought to explore how these models could be used to describe the nature, quality, and motivational basis of USCGA cadets’ restorative experiences. In doing so, we hope to better understand the cadet climate at the USCGA and contribute to the greater literature on stress management by investigating the link between benefits and restoration.

The production model states the inputs of a recreation experience are the recreationists’ choice of activity and setting motivated by the perceived benefits the user expects to receive from doing the activity in the given setting (Driver et al., 1991). Historically, the activity and setting have been assessed separately, but through the use of recreational events, the two may be grouped as a solitary unit of analysis (Pierskalla et al., 2004). This study provided support for this model. Regarding recreational events employed by cadets to reduce stress, different events were related to different motives (benefits). However, there is less evidence to support the efficacy of these recreation events to reduce stress. The discriminant analysis of recreational events only elicited one of the five factors of ART—novelty, the physical act of being away—as related to the recreational

events employed by cadets. More so, novelty was only associated with the last and weakest discriminant function and is the most basic factor of ART. R. Kaplan et al. (1998) stated that being away is not enough to restore oneself through undirected attention. The being away must include experiences of sufficient scope to provide the perception of a new environment, afford captivating opportunities to hold attention, and meet the expectations of the recreationist.

Of greater concern to the efficacy of cadets' choices of events to mitigate stress, the primary events utilized were sleeping in dorms and exercise or physical fitness on the USCGA grounds. Sleep is a physiologic need and a result of the reaction stage of the general adaptation syndrome (Selye, 1956), meaning that stress has already reduced physical resources. Additionally, physical activity just for the sake of physical activity does not necessarily create a restorative state. The motives of physical improvement or physical release are primarily physiological. However, if the time used for physical exercise is also used to reflect on issues and the activity is performed in an environment that offers extent (or feels like a "new world" or "different place"), cadets can begin to utilize undirected attention and reduce the mental components of stress. In this manner, exercise time can be used to both keep up physical standards and help reduce mental fatigue.

Because cadets accumulate numerous stressors beyond that of the typical college student (Meyers, 2004), they need to be in an environment that affords them opportunities to help learn to effectively manage this stress. Results of this study suggested that high and low restorative events that are related to distinct psychological motives not currently employed by most cadets. Though the USCGA promotes stress management for its cadets, these opportunities are related to low restorative events (e.g., physical exercise), which may not reduce the psychological needs of restoration described by Olmstead (as cited in Sutton, 1971), and R. Kaplan and Kaplan's (1989) and S. Kaplan's (1995) description of ART. The USCGA should work to create opportunities for events that lead to high restoration based on providing opportunities to maximize cadet achievement, teach/share skills, and enjoy nature. One example is the Academy class focusing on adventure sports such as canoeing or rock climbing activities, which allow cadets to leave the Academy (escape role overloads), meet goals (achievement), work in teams (share skills), and be in nature.

In addition, the USCGA should try to promote opportunities to allow cadets to maintain their individuality, where appropriate. The college experience is typically one of self-exploration and personal growth. One goal of a service academy is to create a controlled, unified collective following a proper chain of command. Cadets expressed a need for creative outlets of self-expression. Additional opportunities to pursue artistic/creative activities such as drawing, writing, and performing would provide opportunities for self-expression and afford undirected attention that promotes psychological restoration.

Additionally, cadets should be provided with more information about stress and stress management techniques. Cadets need to think about what stressors they face and be proactive in their understanding of how they react to stress. For example, through journaling cadets are afforded opportunities to psychologically escape and keep track of what bothers them and discover patterns of stressful experiences (Antai-Otong, 2001; Lehrer et al., 1994). In reviewing their journals, cadets can decide whether the stressor is a daily hassle or something more and seek the appropriate outlet to mitigate stress. Only through looking inward and understanding their motives for participating in a restorative event can they learn how they best individually deal with different stressors and choose the appropriate strategy to help resolve the stressor.

This study reiterated the importance of stress management for cadets at the USCGA, and the results are likely to benefit cadets of other service academies. Several limitations of note include the inclusion of frequency of use of restorative events and implementing a more physiological approach to measuring stress (e.g., EEG, EKG, etc.) beyond a self-report measure. Additionally, using events as a unit of measurement may lead to statistical problems related to small sample sizes in that events are very specific and unique to an individual. Along these lines, the small number of low restorative events utilized in analyses may lead to concerns about the validity of results. Lastly, this study did not consider the magnitude of stress that a cadet was under. Future research should consider utilizing a quantitative measure of stress, such as the Subjective Units of Disturbance Scale (Wolpe, 1990), as a covariate. Additionally, future research should focus on determining the efficacy of adopting several of the high restorative programs and determining any relationships between performance measures (grade-point average, demerits, etc.) and cadets employing effective stress reduction methods.

Using attention restoration theory, we can see that stress management extends beyond just an activity such as exercise, sleep, or liberty but needs to include a meaningful and appropriate setting. Only by ensuring that the physiological and psychological needs of our cadets are met can we help them achieve their highest potential.

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