

YOGA AND MEDITATION FOR NONTRADITIONAL POPULATIONS

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Abstract

Yoga and meditation have become mainstream practices in the United States, undertaken by 6 percent and 9 percent of the population, respectively, in 2007. In four articles, this master's thesis examines the practice of yoga and meditation by nontraditional populations. The first article is an overview piece on yoga and meditation, which explains what constitutes these practices, as well as who participates in them and why. The second article examines prison meditation programs in North Carolina, profiles two former inmates who benefited from meditation, and describes a meditation class at a state prison. The third article provides an overview of yoga programs for military service members and veterans, and discusses the stigma of yoga within military circles. The fourth article provides guidelines for yoga teachers on instructing service members or veterans. This thesis aims to explore yoga and meditation in-depth and show how and why these practices are reaching new audiences.

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Chapter One

Introduction

In the United States, yoga and meditation have moved from fringe movements to popular activities over the last 40 years, which reflects the changing attitudes in the public, media and scientific communities toward these mind-body practices. Meditation is now practiced by 9 percent of the adult U.S. population, and yoga is practiced by about 6 percent of the nation (Nahin et al., 2008). Yoga has become a very lucrative industry, with about \$6 billion spent on classes and products in 2008 (Yoga Journal, 2008). Highly educated women are the primary demographic for both practices, which are considered mind-body therapies by the National Center for Complementary Alternative Medicine (Nahin et al., 2008).

One driving force behind these therapies is the body of medical literature documenting physical and mental health benefits from these practices. As the Baby Boomer generation has aged, alternative therapies have risen to meet their needs. Yoga is also popular with young adults, many of whom attend classes as a primary source of exercise (Love, 2006).

The media's once skeptical eye has now softened toward these practices, which were formerly regarded as the territory of New-Age followers. Medical and human interest stories abound in the mainstream media about the benefits and popularity of these programs. Outside of yoga studios and Buddhist centers, yoga and meditation are making inroads with groups not typically associated with either practice. Major governmental institutions, including prisons, the military and schools, now host a variety of yoga and meditation classes.

Meditation and yoga classes at prisons are largely initiated by outside volunteers, as opposed to being sponsored by the institutions. The military is funding a number of alternative therapies, including yoga and meditation, to address the mental health issues of returning veterans from Iraq and Afghanistan (Zoroya, 2008). In schools yoga is increasingly being used as a tool to reach at-risk youth. Yoga and meditation are also being employed to support the recovery of individuals who have suffered from a variety of life stresses, including domestic violence and homelessness.

In a series of text stories, this project examines yoga and meditation programs for nontraditional populations. The series details how and why yoga and meditation programs are gaining traction with new populations.

While some media stories detail this rise in the numbers of new yoga programs, much ground remains to be explored. Because these programs are generally small and scattered, many have operated below the radar of the media and the general public. I show why these programs are becoming more popular now and what benefits they offer to practitioners. The efficacy of yoga programs for wounded military members and veterans is important because of the financial and personal cost of war-related injuries.

Likewise, the ability of inmates to rehabilitate has broad implications for society, such as whether or not former inmates commit crimes again. As research money flows toward new applications of yoga and meditation, it is important to know what these programs accomplish, how they affect those involved and in what ways they are evolving to reflect the needs of participants.

Chapter Two

Literature Review

What is Yoga?

Yoga is defined in various ways, but one definition of the word “yoga” in Sanskrit is “union.” In *The Varieties of Religious Experience*, William James defines yoga as “the experimental union of the individual with the divine” (James, 2004). Scientific researchers and yoga instructors consider yoga a “mind-body” discipline because it encompasses both spirituality and physical exercise. In his book, *Yoga for a World Out of Balance*, Michael Stone explains that yoga is more than just physical exercise and includes philosophical teachings and mental focus. “The term ‘yoga’ connotes the basic unity and interconnectedness of all of life including the elements, the breath, the body, and the mind” (Stone, 2009). James writes, “It [yoga] is based on persevering exercise; and the diet, posture, breathing, intellectual concentration, and moral discipline vary slightly in the different systems which teach it.” In U.S. studios, instructors teach a wide

variety of yoga styles. Some are primarily physical postures, such as Hatha yoga, while others emphasize the breath, meditation, and philosophical underpinnings.

Yoga in India

Historians and leaders in the yoga community say they believe that a man named Patanjali was the first to codify yoga, by writing a text in northern India around the third century B.C. (Stone, 2009). Patanjali wrote the *Yoga-Sutras* that outlined an eight-limbed path for yoga, also known as astanga or ashtanga yoga. These eight aspects of yoga encompass what yoga gurus consider the five layers of the human being: the anatomical, physiological, mental, intellectual, and spiritual bodies (Stone, 2009). Of these eight aspects, only one focuses on physical postures, or asanas, which is what Western audiences typically think of as yoga. Another of these eight aspects is pranayama, or breath and energetic regulation, which is incorporated frequently in modern yoga classes in the United States (Stone, 2009).

In my stories for this project, I have examined posture-based yoga classes in the United States. These practices may or may not incorporate breathing exercises, meditation, and other aspects of a traditional yogic philosophy. Posture-based yoga classes are the most common form of yoga in the U.S., and this form of yoga is the easiest to study because its popularity and revenue can be measured.

Yoga in the U.S.

Americans got exposure to yoga in 1805 when William Emerson, father of Ralph Waldo Emerson, published the first Sanskrit scripture translation in the U.S. In 1883, the first Indian cleric arrived in the country and gave a short speaking tour on yoga. In 1888, Sylvais Hamati, an Indian yoga teacher, took on a U.S. student, an Iowan named Perry Baker, known as the first American yogi (Love, 2006).

From the late 1800s to the early 1900s, yoga philosophy spread through the U.S. through lectures, often given by recently arrived Indian swamis or holy men. Many mainstream media outlets published sensationalized reports of yoga leaders, which insinuated that swamis were charlatans who were spreading dangerous ideas and taking money from poor families through their donations. For instance, in 1911 the Los Angeles Times published a story with the headline, "A Hindu Apple for Modern Eve: The Cult of the Yogis Lures Women to Destruction." In the early 1900s, the press often referred to yoga as a cult. Some of this negative reporting stemmed from unsavory characters who identified themselves as yogis; for instance, a grifter called "Yogi Bill Ellis" in the press conducted palm-reading sessions in New York from 1911 to 1915 before his arrest on a number of charges in 1915. During this same time period, racist organizations and laws like a ban on Asian immigrants discrimination against East Indians and other Asians in the U.S. Yoga leaders faced government investigations and legal prosecution. In particular, yoga was seen as dangerous to women, and the press associated yoga with "love cults" (Love, 2006).

In the 1930s and 1940s, the media's attitude toward yoga softened, although yoga was still a small movement in the country. In 1944, Baker, who had changed his name to Theos Bernard, published *Hatha Yoga: the Report of a Personal Experience*, which

featured pictures of yoga poses, possibly a first for a text in the United States. During the 1950s, the public and media responded with denial and paranoia toward yoga. Yet, during the mid-1950s, YWCAs and YMCAs began to offer yoga classes, laying the foundation for the rise of yoga in the 1960s (Love, 2006).

In the 1960s, yoga, as well as other Eastern philosophies, became popular in the United States. According to a report in *The New York Times*, an estimated 20,000 to 100,000 people practiced yoga in the mid-1960s. In the late 1960s, the Beatles started studying Transcendental Meditation and yoga, which increased the visibility of both practices. In the 1970s and 1980s, yoga's growth took a backseat to physical activities like aerobics (Love, 2006).

In the early 1990s, the practice's popularity soared again, a trend that continues to this day. In 1990, *Yoga Journal* had a circulation of 55,000; by 1995 that number was 66,000. (Yoga Journal, 2008). “‘The defining moment when the medical community started taking notice of yoga occurred in 1990,’ *Yoga Journal* editor Kathryn Arnold told the *Los Angeles Times*” (Love, 2006). By 2008 *Yoga Journal*, the most popular yoga publication, had a circulation of about 350,000 (Yoga Journal, 2008).

U.S. Yoga Practitioners

In 2008, 6.9 percent of the adult U.S. population, or 15.8 million people, practiced yoga. That same year, \$5.7 billion was spent on yoga clothes and products, an increase of 87 percent from the previous study in 2004. The typical yogi was female and college-educated. Forty-four percent of yogis have household incomes of \$75,000 or more, with

24 percent making more than \$100,000 yearly (Yoga Journal, 2008). Yoga is also one of the top 20 activities offered at fitness facilities, according to a 2008 survey (Christen, 2009).

As yoga has become more commonplace, the practice has spread outside the core group of upper middle-class adherents. As the Yoga Journal poll noted, “One significant trend to emerge from the study is the use of yoga as medical therapy. According to the study, 6.1 percent, or nearly 14 million Americans, say that a doctor or therapist has recommended yoga to them” (Yoga Journal, 2008).

Yoga classes now are offered to help those with a variety of physical health problems – chronic back pain, multiple sclerosis, and cancer, among others. And research, including large-scale federally funded studies, has been or is being conducted to evaluate the impact of yoga on health problems. Many people also have reported mental health benefits from yoga, particularly a reduction in anxiety or depression.

Outside of yoga studios or gyms, yoga programs are now available for many with special needs. The military has funded yoga classes at a number of military bases to help those with post-traumatic stress disorder and other mental health problems related to service in Iraq and Afghanistan. At Walter Reed Army Medical Center, in Washington D.C., yoga classes are offered twice weekly to soldiers, as well as to caregivers and other staff (Hickman, 2009).

Many domestic violence shelters and workshops also offer yoga classes for sexual assault survivors. In Rwanda, the United Nations endorsed a nonprofit organization called Project Air that teaches yoga to genocide rape survivors infected with HIV.

A number of yoga programs also have begun in prisons, particularly on the West Coast and in juvenile detention centers. Finally, youth at public schools, charter schools, juvenile detention centers, and homeless shelters receive yoga instruction. These locations are in addition to “Mommy and Me” baby and children’s yoga classes that are popular in traditional studio settings.

What is Meditation?

People practice many different types of meditation. According to the *Yoga-Sutras*, a collection of writings on yoga by Patanjali in the 3rd century B.C., meditation is an act of inward contemplation (Stone, 2009). The practice is often categorized as either concentration- or mindfulness-style meditation, although these categories may overlap. Concentration-style meditation involves focusing on a specific object or act, such as breathing, counting, or repeating a mantra; Transcendental Meditation is an example of this category of contemplation. Mindfulness meditation does not narrow the meditators’ focus, but rather expands it. According to Ivanovski and Malhi, “mindfulness techniques... involve the expansion of attention in a nonjudgmental and nonreactive way to become more aware of one’s current sensory, mental and emotional experiences.” Zen and Vipassana meditation are mindfulness practices (Ivanovski and Malhi, 2007).

Several Eastern religious practices, particularly Buddhism, incorporate meditation. An estimated 0.7 percent of the U.S. population practices Buddhism. In the U.S., most Buddhists are U.S.-born adherents, with nearly three out of four Buddhists having converted to the religion (Pew Forum on Religion and Public Life, 2007).

However, many people practice meditation who are not religious or do not consider meditation part of their religious practice. More than 9 percent of the adult U.S. population meditate, and 6 percent practice yoga, according to a 2007 survey by the National Center for Complementary and Alternative Medicine, part of the National Institutes of Health. Complementary alternative medicine, which includes meditation, is most likely to be used by women, people with higher education, former smokers, and those who had been hospitalized in the last year (Barnes et al, 2002). Research on meditation's health effects continues to grow in the U.S., with new brain imaging techniques greatly accelerating knowledge of how meditation affects brain circuitry and plasticity.

Yoga and Meditation for Nontraditional Populations

Tailoring Yoga Teachings

As nontraditional yoga programs grow more popular, so do teacher trainings that instruct yoga teachers on how to tailor their teaching toward groups with special needs. In an article for yoga teachers in *Yoga Journal*, Molly M. Ginty detailed techniques and considerations necessary for teaching at-risk populations, whether they are domestic violence survivors or prison inmates. Teaching yoga to at-risk populations presents a range of challenges from inadequate equipment to emotional outbursts. The article suggested teachers read Bo Lozoff's book, *We're All Doing Time*, train at a program like Yoga Behind Bars or pair up with a teacher experienced in this sort of work. Teachers are

also encouraged to maintain class rules, keep the yoga practice simple and be cautious about offering physical adjustments to students who may find unexpected touch problematic (Ginty, Date Unknown).

Additionally, there are teacher trainings for those who want to teach yoga to multiple sclerosis patients, cancer survivors, or youth with cerebral palsy. Research suggests promising benefits from yoga in cancer patients, including managing insomnia, stress, mood and anxiety. An article in the Clinical Journal of Nursing Oncology advised nurses on how they can help patients integrate yoga into a treatment plan by discussing benefits and risks, as well as types and levels of yoga (DiStasia, 2008).

Yoga's Therapeutic Uses

Evidence supports some benefits from yoga (Van Puymbroeck et al., 2007). Research in this area is still in its infancy, and many studies are small and lack scientific rigor. However, research is beginning to suggest that yoga has positive benefits for chronic back pain and anxiety, among other conditions.

In 2005, 16 federally-funded studies examined the efficacy of yoga programs, including yoga's use in treating generalized anxiety disorder (Jeffrey, 2005). The National Institutes of Health funded several studies of yoga's physical benefits, including its impact on heart disease patients and pregnant asthmatics. The NIH awarded the University of Texas M.D. Anderson Cancer Center \$2.4 million to study the impact of Tibetan yoga among women who receive chemotherapy for breast cancer. The NIH also awarded grants to study yoga's effects on insomnia, generalized anxiety disorder and

chronic lower back pain (Jeffrey, 2005).

Physical therapists often use yoga to help their clients. Although the amount of literature on the topic is limited, in the last decade a number of studies have examined yoga's effects on a variety of health problems including chronic lower back pain, perhaps the most studied of yoga's physical effects (Wojciechowski, 2008).

In a research study Saper and colleagues concluded, "A yoga study intervention in a predominantly minority population with chronic low back pain was moderately feasible and may be more effective than usual care for reducing pain and pain medication use" (Saper et al, 2009). In Boston, Saper and colleagues conducted a 30-person, randomized controlled study that divided participants with chronic back pain into two groups: a weekly Hatha yoga class group and a waitlist usual care control group. The Hatha class sequence of breathing and postures was developed by a panel specifically to address back pain. A majority of participants identified themselves as black, and almost half were low-income.

After 12 weeks, the yoga group reported less pain and more back-related function, although one participant reported worsening back pain from yoga. The yoga group also reported less analgesic use, less pain and greater overall improvement. The differences were great between the two groups in regard to pain medication. In a survey conducted after 12 weeks, yoga participants' use of any pain medications during the previous week decreased from 67 percent to 13 percent, whereas the control group's usage did not change. After 12 weeks, no yoga participants were using opiates, whereas opiate usage by the control group increased by 33 percent. The researchers attempted to obtain follow-up

data at 26 weeks, but that was difficult because the yoga group disbanded at the end of the study and made analysis of that data problematic (Saper et al., 2009).

The authors identify several flaws in the study's design. As the authors note, the usual care group did not control for the increased attention and group support the yoga group received. Additionally, Saper et al. allowed one yoga student, who objected to group participation, to practice from home, which changed that individual's experience. Like other yoga studies, this one also had a small number of participants, which might mean that participant characteristics were unevenly distributed. Finally, the authors state that the study should have included a better mechanism to conduct the 26-week follow-up data.

This study suggested that minority participants with low-back pain, like participants in other studies, respond well to yoga classes and may be able to significantly decrease pain medication as a result of this treatment. The authors concluded that adding yoga to the treatment protocol of minorities with lower back pain could be beneficial.

Researchers are also investigating the impact of yoga on mental health issues like depression and anxiety. Researchers often find it difficult to study yoga's impact because of all the varied forms of yoga; however, researchers are trying to strengthen their studies' designs to isolate better the practice's effects.

In another study, untreated melancholic depressives were randomly divided into three groups and treated with electroconvulsive therapy, imipramine or kriya yoga. Imipramine is an antidepressant; kriya yoga is a type of yoga that uses specified rhythmic breathing. Participants in the yoga group practiced at least four times during the week. This 45-person study in India, by Janakiramaiah et al., found that kriya yoga was not as

effective as ECT, but was almost as effective as imipramine in treating depression. At the end of the trial, the rates of remission were 93, 73 and 67 percent among ECT, imipramine, and kriya yoga, respectively (Janakiramaiah et al., 2000). Evaluations were done weekly during the four-week program by a psychiatrist who was uninvolved in the study before the start of treatment.

Because of the severity of the patients' depression, the authors contend that the placebo effect does not explain the rates of remission in the yoga group. Additionally, the size of each group – 15 patients – was small. (Janakiramaiah et al., 2000).

Another study examined the impact of yoga on young adults with mild depression. In a randomized, controlled pilot study of 28 young adults with mild depression, Woolery et al. found a reduction of self-reported depression and anxiety in the yoga group. Participants attended two one-hour Iyengar yoga classes weekly for five weeks. Iyengar is a form of yoga that focuses on postures, also known as asanas, and body alignment within those postures. During the study, three students from the yoga group dropped out, as did two from the control group. Midway through the program, the yoga group's depression and anxiety rates dropped, which was maintained throughout the course. Additionally, yoga students had a trend toward slightly higher morning cortisol levels by the end of the program relative to the control group. Higher morning cortisol levels, Woolery wrote, are associated with self-esteem and lower levels of depression (Woolery et al., 2004).

As in other yoga studies, the small sample size in the Woolery study and lack of placebo or alternative treatment are weaknesses in the study. Woolery suggested that future studies compare yoga to other forms of exercise.

Yoga and Meditation in the Military

The military has recently implemented a number of yoga and meditation programs at military bases and veterans hospitals. The Pentagon is researching alternative treatments, such as meditation, acupuncture, yoga, and therapy animals, for troops suffering from combat stress or brain damage. Another perceived benefit of yoga is its ability to reduce anxiety, which is one of the military's motivations for its yoga programs. In 2008, the Pentagon spent more than \$5 million to research these types of alternative therapies. In 2006 and 2007 the Pentagon had spent no money researching such treatments (Zoroya, 2008).

A major motivation for the military's newfound openness to alternative therapies is that it faces significant challenges in treating returning soldiers who suffer from post-traumatic stress disorder and other mental health problems. In 2008, about 300,000 Afghanistan and Iraq veterans were identified as possibly having PTSD, and about 320,000 may have suffered from a mild concussion or brain damage (Zoroya, 2008).

Yoga and meditation programs at military bases are still small-scale and scattered around the country. The Specialized Care Program at Walter Reed Army Medical Center, based in Washington, D.C., offers yoga as part of a program to address mental health issues in veterans. Walter Reed has offered yoga since 2006 to help treat soldiers suffering from post-traumatic stress disorder (PTSD) at a cost of about \$800,000 annually for the comprehensive mental health program. About 120 soldiers at Walter Reed take

yoga annually, as part of a broad rehabilitation program. Walter Reed is planning to take this program to other bases across the country (Rivers, 2008).

Another separate yoga program at Walter Reed has yet to be featured in the press; this program focuses both on hospital staff, many of whom have stressful jobs caring for veterans, and rehabilitating soldiers recovering from physical injuries like amputations (Hickman, 2009).

Little research has been conducted on yoga in military or veteran populations. However, in a study by Groessi et al., veterans with chronic low-back pain participated in a yoga program to gauge its impact on chronic back pain. Chronic back pain, which may be prevalent at a higher rate in veterans than the general population, is expensive to treat and associated with increased depression and anxiety. Thirty-three participants with chronic back pain completed the study. Each veteran completed a questionnaire at baseline and then 10 weeks later after attending a minimum of eight classes. Veterans attended weekly yoga classes that consisted of 32 poses selected for patients with low back pain; these poses focused on structural alignment and were matched with slow, deep breathing. Additionally, the patients were advised to do a yoga home practice. Home practice was self-reported and a factor in analyzing the program's success. The questionnaires evaluated the veterans' experience of pain, depression, energy/fatigue and health related quality of life (HRQOL). Yoga practice had a significant improvement on veterans' pain levels, depression and energy/fatigue. Also, the amount of home practice appears to have shown a "dose response" effect with those practicing at home showing a greater degree of improvement than those only attending classes (Groessi et al., 2008).

As the authors noted, this study was not randomized or controlled, but rather

presented preliminary data of yoga's effectiveness on back pain. This study is of interest because it focused on VA patients who are primarily male and slightly older than many subjects in other yoga studies. Considering the expense of treating chronic back pain and the limited effectiveness of drugs, yoga could be an important complement to other treatments. However, this study was small with no control group available for comparison. (Groessi et al., 2008).

The military is also investigating meditation and other mind-focusing techniques as ways to enhance soldiers' ability to perform and cope with battle. For example, the Army intends to train its 1.1 million soldiers in "the art of mental toughness." One program already working toward that goal is called "Warrior Mind Training," which is offered at 11 military bases. Designed by four civilians, the program uses techniques similar to those found in yoga, meditation, and martial arts to help soldiers relax and manage stress (Associated Press, 2008). While it has not been analyzed through a controlled study, students of the Warrior Mind Training program have reported that they are better able to handle stress and display better self-control. Some students say their aim at the shooting range has improved as a result of the program.

According to Rochman, "The West Point-based Army Center for Enhanced Performance (ACEP), which draws on performance psychology to teach soldiers how to build confidence, set goals and channel their energy, has expanded to nine army bases in the past three years since the Army's chief-of-staff praised the program" (Rochman, 2009).

The Indian Army is using yoga to train deadlier fighters. Following yoga training, army members had stronger grips and steadier hands than peers who followed a

traditional training regime (National Public Radio, 2008). The use of yoga not just to help soldiers cope with battle, but also to help them be better fighters, is controversial in the yoga community as some view these practices as a violation of yoga's tenet of nonviolence.

Meditation and Mental Health

Increasingly, studies indicate that meditation can be helpful in treating a variety of psychological disorders. Many of these studies lack control groups or are flawed in other ways, but the number of well-designed studies is increasing.

In a review of the literature, Ivanovski and Malhi analyzed studies of mindfulness meditation. Acknowledging the limitations of categorization, the authors differentiated between mindfulness meditation and concentration meditation. They confined their literature review to mindfulness meditation that they defined as "the awareness that emerges through paying attention on purpose, in the present moment, and non-judgmentally to the unfolding experience moment by moment." They wrote that mindfulness meditation interventions "appear to be effective in the treatment of depression, anxiety, psychosis, borderline personality disorder and suicidal/self-harm behaviour." However, because meditation was used in these studies as part of a multifaceted therapeutic approach, evidence does not exist that this practice was helpful by itself for psychological disorders (Ivanovski and Malhi, 2007).

Ivanovski and Malhi's literature review found that mindfulness meditation as a stand-alone practice was helpful for prison inmates. A type of Buddhist meditation called

Vipassana is offered as a 10-day program in some Indian jails; inmates who took this course were determined to have a reduced rate of recidivism, depression, anxiety and hostility. In a more recent, nonrandomized study, Vipassana meditation compared favorably to other traditional prison programs. Participants in the meditation program were found to have “less use of cocaine, alcohol and marijuana and significantly lower levels of psychiatric problems” three months following release from prison (Ivanovski and Malhi, 2007).

A separate literature review of controlled research in the Canadian Journal of Research did not find an effect from mindfulness meditation on depression and anxiety. The authors in this journal article examined peer-reviewed, controlled studies on the subject and came to the conclusion that “mindfulness-based stress reduction” did not show an effect on depression and anxiety. The authors did note that there were difficulties in comparing studies because of the varieties of methodologies employed (Toncatto and Nguyen, 2007).

Meditation and Neurology

The use of brain imaging to study meditation’s neurological impacts is a fascinating new area of study. Sarah Lazar and others used magnetic resonance imaging to examine differences in the cerebral cortical thickness of experienced Buddhist insight meditation practitioners. The researchers examined the brains of 20 practitioners who meditated daily for at least 40 minutes, as well as a control group of 15 people who did not meditate. In meditators, areas of the cortex associated with somatosensory, auditory,

visual and interoceptive processing were significantly thicker than in nonmeditators (Lazar et al., 2005).

Additionally, Lazar et al. examined how frequency of meditation practice affected heart rate. They found heart rate typically dropped as a result of regular meditation practice. They also tested whether respiration rates corresponded with meditators' self-report of total hours practiced. Lazar et al. found a correlation between respiration rate and cumulative hours practiced. They also found a correspondence between the thickness of the inferior occipitotemporal visual cortex and respiration rate (Lazar et al., 2005).

In another study, researcher Antoine Lutz and others examined the impact of meditation on the activation of neurocircuits in the brain. While experienced and novice meditators generated a loving-kindness-compassion meditation state, researchers assessed their brain activity using fMRI. During periods of meditation and rest, the participants heard positive, neutral, and negative emotional sounds. In addition to using fMRI to observe activation of brain circuitry, the researchers also measured pupil dilation to gauge autonomic arousal (Lutz, 2008).

All participants had stronger neural responses to emotional sounds during meditation than during rest. In the somatosensory region, expert meditators (who had meditated for more than 10,000 hours during their lifetime) had stronger reactions than novices to negative sounds during meditation than to positive sounds. The somatosensory region is linked to affect and feelings. Additionally, the degree of response in these regions of the brain, Lutz wrote, was linked “with the degree to which participants perceived that they had successfully entered into the meditative state; with expertise of compassion meditation; and with the relevancy of the emotional sounds during the

compassion meditation.” (Lutz, 2008).

Of interest, the study measured a response as it was happening. The use of fMRI helps to build a convincing case that meditation can affect the brain. However, the study was small – just 16 expert meditators and 16 novices. All the expert participants were Asian or European, whereas all the novice participants were from Wisconsin. As the authors suggested, a longitudinal study would help show how meditation changes the brain over time and remove the possible influence of nationality and attraction to meditation on subject response.

Meditation and Prisons

While small in number, meditation programs in U.S. prisons date at least to the early 1970s and have become more popular recently. No comprehensive data on the number of meditation programs in U.S. prisons exist. Yet, a number of research studies have looked at these programs’ effects, including studies on meditation programs in Indian jails, where such programs are widespread.

Some prison meditation programs are not religious, while others are specifically Buddhist in orientation. In the U.S. both inmates and instructors have reported resistance from prison administrations in teaching non-Christian philosophy, although officials’ reactions vary from prison to prison. In addition to classes held within the institution, several organizations pair inmates with Buddhist or meditation mentors, including those from the Raleigh, North Carolina-based Liberation Prison Project. LPP, started by an Australian Buddhist nun, estimates that it has supported the Buddhist practice of 20,000

inmates worldwide. According to one estimate by a volunteer teacher, about 10 people teach meditation in eight North Carolina prisons (Cunningham, 2009).

Mindfulness meditation is effective in reducing substance use and recidivism rates in incarcerated populations, according to a review of the literature by Ivanovski and Malhi.

In a review of literature on transcendental meditation programs by Mark A. Hawkins that addressed treatment and prevention of criminal behavior and substance abuse, 39 studies done over 30 years were examined. These studies included incarcerated offenders, at-risk youth, and patients in treatment centers. “Incarcerated offenders show rapid positive changes in risk factors associated with criminal behavior, including anxiety, aggression, hostility, moral judgment, in-prison rule infractions, and substance abuse.” As a whole, Hawkins found that studies showed that Transcendental Meditation reduced substance abuse, as well as anxiety, depression and other psychological issues that may lead to substance abuse (Hawkins, 2003).

Mindfulness-based stress reduction (MBSR) is an eight-week training course on mindfulness, or moment-to-moment awareness, developed in 1979 at the University of Massachusetts Medical Center. MBSR is disseminated widely. Studies have examined its impacts in inner-city community settings and in therapeutic environments for substance abuse treatment. In 2007 Samuelson et al. reported on 1,350 inmates in drug units in six prisons in Massachusetts who completed mindfulness-based stress reduction courses, one of several options offered to inmates in a rehabilitation program. Other options were smoking cessation, literacy training, or an exercise and walking program. Participants were evaluated pre- and post-course using self-report measures. After completion of the

MBSR course, participants showed significant improvements in hostility, self-esteem, and mood disturbance. Women improved more than men, and improvements for men in minimum-security prisons were greater than those in medium-security prisons.

Samuelson wrote that meditation, by increasing inner calm and self-respect, helped prisoners cope with the stressful life of incarceration (Samuelson et al., 2007).

Samuelson et al.'s study, as the researchers noted, was not formally designed and lacked a control group. Additionally, the study relied on self-report measures rather than linking results to inmates' recidivism rates, infractions, or cravings for substances.

A retrospective study of California inmates who completed a Transcendental Meditation course did, however, consider recidivism rates. Researchers Bleick and Abrams matched 259 male felony parolees who had completed the TM course with controls who had not. They found significantly lower recidivism rates for meditators after one year of release and up to six years later (Bleick and Abrams, 1987).

This study was designed after the meditation courses had occurred and the parolees had been released. Although the authors did their best to match meditating inmates with similar non-meditating inmates, they say that the study would be stronger if the control group had been established from the start, instead of pieced together from minimal data after release.

Yoga in Prisons

A handful of nonprofit organizations offer yoga programs in prison. Numerous yoga classes are also taught by volunteer teachers, particularly at juvenile detention

centers. The majority of the yoga programs in prison that I was able to identify are located on the West Coast. The Give Back Yoga Foundation partners with the Prison Yoga Project, among others, to help spread and support yoga programs in correctional institutions.

In Spokane, Wash., a detention center has become a first-of-its-kind “therapeutic community” that features yoga and other activities implemented throughout the prison population (Bharawadj, 2008). In most cases, yoga classes are offered on a voluntary basis and serve a small number of inmates at an institution. In New Jersey, yoga teacher Jennifer Kohl teaches yoga at a juvenile detention center, homeless shelter, drug rehabilitation center, and Veterans Affairs hospital. A spokeswoman for the juvenile detention center said the yoga classes have helped provide discipline, relaxation, and an opportunity to interact to the residents (Klein, 2008).

Yet, little scientific literature exists that examines the efficacy of these programs.

Yoga for other Nontraditional Populations

Yoga is now being used as part of the recovery process of other groups, including sexual assault survivors, homeless populations, and at-risk youth.

Street Yoga, a nonprofit organization in Portland, Ore., is emblematic of this trend. The organization offers classes for at-risk youth, homeless youth, young sexual assault survivors and youth in juvenile detention centers. The organization said it intends to give “youth and their caregivers the tools to overcome early life trauma, through the sharing of life-building mindfulness and wellness practices grounded in the ancient

healing principles of yoga.” The group also trains yoga teachers how best to teach these populations (Street Yoga, 2009).

The media are taking notice of several organizations that hope to empower homeless individuals and domestic violence survivors through yoga practices. A handful of homeless shelters nationwide now offer yoga classes. In Rwanda, the United Nations endorsed a yoga program that helps HIV-positive genocide rape survivors. This innovative program was recently featured in a *CNN* broadcast (Project Air, 2009).

Finally, youth yoga programs abound, although it is unclear how many of these programs exist. Some of these programs are in traditional studio settings, but many others are now available at public schools and after-school programs throughout the country.

Chapter Three

Research Questions and Methodology

The purpose of this thesis project was to examine meditation and yoga programs offered to nontraditional populations. The series features four stories that answer the following questions:

- What are the effects of meditation and yoga for practitioners?
- How do the preconceptions of participants from nontraditional populations compare to their actual experience?
- Why are these programs gaining legitimacy within the scientific community and media?
- Do meditation and yoga teachers adapt their teachings to nontraditional populations? If so, how?

- What impact does teaching meditation and yoga to these groups have on their teachers? What training is available for those who teach nontraditional populations?
- What challenges, such as stigma, do these programs face as they spread to new environments?

To complete this series of stories, I employed techniques of observation and interviewing. I conducted in-person, phone, and email interviews. I told sources that I was doing these stories for a journalism thesis and that I might also publish the pieces.

For my first story, an overview on meditation and yoga, I used research data compiled in this literature review. I interviewed yoga students, teachers, and studio owners in the Chapel Hill, N.C., area. I also contacted local Buddhist centers to interview members and lecturers for more information on meditation. This 1,600-word piece describes yoga and meditation, as well as their effects and the demographics of participants in the U.S.

For my second story on prison meditation programs, I contacted the Raleigh-based Liberation Prison Project, the Durham-based Human Kindness Foundation, and the Kadampa Center in Raleigh to find sources for this 4,100-word story. I also observed a prison meditation program, led by Herb Cunningham at Caledonia Correctional Institute in northeastern N.C. In this feature story, I described the motivations for and effects of meditation on inmates, as well as how inmates' meditation practices fare upon release from incarceration.

For my third and fourth stories, both on yoga programs in the military, I contacted an acquaintance who teaches yoga to members of the military in Washington, D.C., and sent out an inquiry to a list serve of yoga teachers. I also contacted the Give Back Yoga Foundation, which connected me to a Newington, Conn., yoga program. Finally, I sent out an interview request through Facebook to fans of the Yoga for Vets nonprofit organization.

The third story examined the types of yoga programs for military service members and veterans and the benefits of those programs. I also detailed the reasons that military and veterans organizations are more open to yoga programs at this point in time. Finally, I examined the perception of yoga by people within military circles.

My fourth story is intended for a yoga trade publication and detailed recommendations for yoga teachers who instruct military service members or veterans. I interviewed several yoga teachers, as well as a few students of these programs, in order to write the 1,600-word piece.

Limitations

The demographics of these nontraditional populations – inmates, military service members and veterans – present difficulties for the journalist. In particular, access to these groups was difficult. In regard to the prison meditation article, I was not able to use a recording device in the prison, but I was able to observe and take notes during the class. I was not provided the opportunity to interview inmates, but I was able to interview the

administrative program sponsor, the instructor and two former inmates who developed a meditation practice in other prisons.

For the military-related stories I worked within the confines of what the military allowed me to document. I was not able to find a class that would allow me to videotape. However, because a number of military yoga programs are in different branches of the armed services, as well as at veterans facilities, I had multiple opportunities to research this story and was able to interview many people involved with this work.

Chapter Four

Yoga & Meditation on the Rise

In the United States yoga and meditation have moved from fringe movements to popular activities over the last 40 years. The popularity of these two activities reflects changing attitudes in the public, media and scientific communities toward mind-body practices.

During the last decade, meditation and yoga practices have become mainstream activities. Yoga is now a multi-billion dollar industry, according to Yoga Journal. Researchers and practitioners say the practices appeal to the public because they provide physical and mental health benefits and create a sense of community.

Yoga and meditation also are making inroads with groups not typically associated with either practice. Major governmental institutions, including prisons, the military, and schools, now host a variety of yoga and meditation classes.

“A generation ago, yoga was not something many people even knew about. Now [there are] yoga mats in Whole Foods and Target,” says Carol Krucoff, a yoga therapist at Duke Integrative Medicine in Durham, N.C.

“There’s so many options for people,” says Lori Burgwyn, owner of Franklin Street Yoga studio in Chapel Hill, N.C., who cites yoga’s availability at yoga studios, gyms and through private instructors. Burgwyn’s business has thrived despite the recession.

“I feel like a lot of Americans are just now finding about these [meditation] techniques that have been practiced in other parts of the world for years,” says Patrick Dowd, 22, a senior at the University of North Carolina at Chapel Hill. Dowd meditates daily and attends the Kosala Buddhist Center in Chapel Hill.

Historians and leaders in the yoga community say they believe that a man named Patanjali was the first to codify yoga, by writing a text in northern India around the third century B.C. Patanjali wrote the *Yoga-Sutras* that outlined an eight-limbed path for yoga, also known as astanga or ashtanga yoga.

“Yoga is a 5,000-year tradition that originated in India,” says Krucoff. “Yoga’s designed to unify. It unifies the mind and the body... and it’s a way to quiet the mind.”

Teresa Pérez, a yoga teacher at Carrboro Yoga Company, says that asana, pranayama and meditation are three of the limbs described by Patanjali. Asana are physical postures, such as downward dog or standing and folding forward as if to touch one’s toes. Pranayama are breathing patterns, which are often coordinated with movement from one posture to another in a yoga class. Meditation is an act of contemplation.

“I try to meditate every morning when I wake up,” says Dowd. “I try to do it for 25 minutes every morning, [by] sitting on a cushion, [and] focusing on the breath. Whenever I have thoughts, I just return to the breath.”

More than 9 percent of the adult U.S. population meditate and 6 percent practice yoga, according to a 2007 survey by the National Center for Complementary and Alternative Medicine, part of the National Institutes of Health.

In 2008 Americans spent about \$6 billion on classes and products, according to Yoga Journal. The Yoga Journal survey also found that 72 percent of yoga practitioners are women, 71 percent are college educated and 44 percent have household incomes of \$75,000 or more. NCCAM reports similar data that those who use mind-body therapies, which include meditation and yoga, are most likely to be female, highly educated and not poor; 24 percent of women and 14 percent of men practice mind-body therapies.

Yoga and meditation are not mutually exclusive because yoga traditionally incorporates meditation. Also, both practices aim to focus the mind and use the breath as a tool.

There are numerous types of yoga classes. Pérez teaches vinyasa classes, which are sequences of yoga postures that the student moves through at a quick pace. Vinyasa classes also focus on matching the inhalation and the exhalation of the breath to the movement through the sequence of postures.

Burgwyn teaches power yoga, which is a physically challenging practice. She also keeps her yoga studio heated, which she says helps students to cleanse through sweating.

“All those physical practices were created because the ancient yogis viewed disease as an obstacle to the divine,” Krucoff says.

Just as there are many types of yoga practices, there are many varieties of meditation.

“Meditation is a systematic method for training our minds to think in positive, virtuous manners,” says Dowd.

“Mindfulness meditation is more like open or broad focus,” says Sandy Gentei Stewart, 72, abbot of the North Carolina Zen Center in Chapel Hill. In mindfulness meditation, for example, an individual would notice if a fly lands on her head, whereas she might not notice the fly during concentration meditation. “In concentration meditation, you focus on one object,” such as the tip of the nose, says Stewart.

A body of medical literature documents health benefits from meditation and yoga.

“One of the strongest benefits [of meditation] from a medical perspective is stress management,” says Susan Gaylord, director of the program on integrative medicine at UNC-Chapel Hill. Her program offers a 10-week mind-body skills class, taught by a psychiatrist, for people seeking to decrease stress.

Participants in this program take a two and a half hour class once a week, where they learn techniques like meditation, guided imagery and yoga.

“Meditation improves coping ability in various illnesses and conditions, [and] it has been shown to be helpful for populations with anxiety, depression and pain issues,” Gaylord says.

Gaylord’s program is finishing a study on meditation’s helpfulness for those suffering from irritable bowel syndrome; she is about to start a study that examines whether meditation can help slow the progression to diabetes in prediabetics.

“Mindfulness gives [people] a tool to learn how to slow down and examine and let go of thoughts that aren’t helpful to them, [while] attending the breath learns how to stay in the present moment,” Gaylord says.

“[Meditation] allows your body to relax [and to be] more in a restorative mode,” she adds.

Meditation is safe for almost all populations, although most researchers say the practice can be harmful to those with schizophrenia who may become more focused on confused thought, Gaylord adds.

“The medical field is becoming more accepting of meditation,” Gaylord says. “There’s been a shift even in the last few years, [toward] acceptance but not necessarily promotion... of mindfulness.” Gaylord started a course on complementary medicine for medical students and health professionals at UNC in 1995. She says the course has grown more popular over the last several years.

Gaylord says the state of research for meditation is in the “teenager” phase, with the National Institutes of Health funding many studies that examine the mechanisms behind meditation’s health impacts.

“The whole area of scientific study of yoga as therapy for a particular condition is relatively new,” says Krucoff.

Krucoff says there is a significant uptick in the number of studies underway on yoga’s effectiveness for medical conditions. PubMed, the U.S. National Library of Medicine’s health database, lists 151 clinical studies of yoga therapy, 117 of which date from 2000. Krucoff says the strongest existing medical literature points to yoga’s helpfulness for back pain, hypertension, inflammatory bowel syndrome, depression and anxiety.

Both Gaylord and Krucoff say as yoga and meditation become mainstream, practitioners of Western medicine increasingly are accepting these practices and studying their effects.

“Most people come to yoga class for a specific physical condition -- they want to get yoga abs or a yoga butt or their back hurts,” Krucoff says. “But then when people take a yoga class, over time they realize how much better they feel. It changes their outlook.”

“Yoga’s looked at as an alternative to be put on Zoloft or Prozac,” says Burgwyn.

Some of Burgwyn’s students tell her that they would be on antidepressant medication if they didn’t attend her yoga classes. She also teaches several UNC athletic teams, including men’s crew and women’s volleyball, to increase their athletic abilities.

Dowd, the UNC senior, started meditating in high school to deal with depression stemming from his godfather’s death.

“I probably saw six therapists. [They] put me on medications that didn’t help me at all,” says Dowd. “Then I started to meditate, and I recognized we have a lot of power to affect how we think and how we feel.”

Pérez also finds mental and physical benefits from her yoga practice.

“When I do a [yoga] practice in the morning, I’m so much more focused throughout the day on the tasks at hand,” Pérez says.

Pérez, 30, originally started taking yoga in college because she thought it would help her manage stress. After graduation, she suffered a severe knee injury while working in Guatemala. Trying to deal with that injury led her to start taking yoga on a regular basis.

“I think on some level – even if people don’t recognize it – people are yearning for a deep connection,” says Pérez. “You can get the same physical benefits from pilates, but there’s a reason people chose yoga over pilates.”

In addition to the health benefits, she sees another reason for yoga’s popularity.

“People are really lonely and suffering a lot,” Pérez says. “I feel like community has become so secondary in America. Yoga studios have become a center for people to cultivate community.”

“Meditation is starting to thrive in the West because of a recognition that happiness is not something outside of ourselves,” says Dowd, “and if we want to become happy we have to develop our minds.”

Disillusionment with mainstream religions also motivates people to pursue yoga and meditation.

“I went to a parochial school when I was younger,” says Dowd. “I’ve always been very interested in religion, but I felt pretty alienated from Christianity at a young age.” After several years of practicing meditation, Dowd now identifies himself as a Buddhist.

“I think people are increasingly disillusioned with religion,” says Pérez, who was raised as a Catholic and who cites the sex scandals of priests as a reason to leave the church.

“Yoga is not a religion, but there’s a philosophy that goes along with the practice. Whether people know it or not, they are looking for something deeper.”

“I think because yoga and meditation are new to this culture, we haven’t become so accustomed to its forms that we have lost sight of the core teachings,” says Stewart,

who became ordained as a Zen Buddhism teacher in 1971. Zen is a type of Buddhism that originated in China.

“If we were to look deeply at any of the great faiths, we would find the same core principles, which relates to how the self and the other becomes one,” he adds.

Chapter Five

Mind Over Matter: Meditation in Prison

From the Kadampa Buddhist Center in Raleigh, Herb Cunningham heads north and east, away from the subdivisions and the malls, away from the Starbucks and the traffic and on his way to teach a prison meditation class in rural North Carolina.

Snaking up I-95, north of Rocky Mount, Cunningham heads past cotton fields, a woman meeting her son's school bus, a Bingo parlor, Aunt Ruby's peanut shop, and the Hardee's restaurant in tiny Enfield. Two hours after his departure, Cunningham reaches Tillery in sparsely populated Halifax County.

There, at the end of a long road sits Caledonia Correctional Institution. In operation since 1892, Caledonia houses 638 male inmates at capacity. On the prison's 7,500 acres, cattle graze on the prison's land, small shelters house bloodhounds trained to track escapees, and armed men stand watch in guard towers around the perimeter of the main compound.

After parking his car next to an administration building, Cunningham walks through a high metal gate opened by guards and through two fences ringed with barbed wire, then into a red and pink rose garden, and finally into the prison itself.

“You here for the Buddhist thing?” asks the pony-tailed guard working the front desk.

Cunningham, 73, is one of a small number of people – probably fewer than 10 – who regularly teach meditation to inmates at eight North Carolina prisons. Teachers from a few other organizations, including the Durham-based Human Kindness Foundation and the Raleigh-based Liberation Prison Project, provide inmates instruction on meditation via correspondence.

These programs promote meditation to help prisoners control emotions, overcome trauma from troubled pasts and cope with stresses of confinement. “Prisoners are in horrific situations,” says Sita Lozoff, who co-founded the Human Kindness Foundation. She says her goal is to teach prisoners “how to use that time skillfully, how to get the most out of it spiritually.”

Cunningham, who co-founded the Kadampa Buddhist Center in Raleigh, started teaching meditation at Raleigh’s Central Prison in 1995, following a prison official’s request. He estimates that there are one or two meditation programs at eight of the 71 prisons in North Carolina. Most are nonreligious programs, what he calls “stealth Buddhism,” although he says three Buddhist programs are taught as well.

Cunningham explains his philosophy of teaching inmates: “Most problems are in your mind.... The way we go at it is: ‘OK, you got this problem, how did you get there, and how do you let go?’ ”

Some inmates and prison teachers say traumatic events led them to meditation as a stand-alone practice or as part of a Buddhist religious practice. Cunningham became a Buddhist 20 years ago after his business had failed, and he had to file for bankruptcy. Now, Cunningham helps inmates use meditation to deal with anger and other emotional issues. Likewise, two former inmates, Mary Smith and Dan Dimitrov, started meditating to cope with emotional issues and now support the meditation practice of inmates. Smith, who now works for Liberation Prison Project, returned to practicing Buddhism after a hiatus during most of her adulthood, during her second prison term for theft. Smith, 44, says meditation helped her overcome her paralyzing reaction to others’ anger.

Dimitrov started meditating during a six-year stint in an Ohio prison for a violent crime, the exact nature of which he did not wish disclosed. He now volunteers at the Human Kindness Foundation. “I think selfishness is the cause a lot of my suffering, thinking that my problems are a lot more important than others, which I used to call ‘chronic uniqueness,’ ” he says, adding that meditation helped him develop compassion for the suffering of other people.

In the last three decades, the medical community has taken an increased interest in studying meditation.

“There’s been quite a lot of meditation studies done, [including] studies of mindfulness [programs] for prisoners and [meditation for those with] substance abuse problems in the prison,” says Susan Gaylord, director of the program on integrative medicine at the University of North Carolina at Chapel Hill.

Mindfulness meditation, also called insight meditation, entails an open or broad focus, so that an individual is aware of her body’s sensations and environment. One related program studied in prison and elsewhere is called mindfulness-based stress reduction, which is an eight-week program of mindfulness meditation in which the student learns to integrate mindfulness practices into daily life.

Other types of meditation require concentrating on a particular emotion or body part; one common meditation practice is ‘compassion’ meditation, in which an individual meditates on other people experiencing well-being and freedom from suffering. Dimitrov, for example, said that meditation helped him develop compassion for other people and their difficulties.

Gaylord says meditation can be helpful for depression, anxiety, stress management and coping with illness.

In a retrospective study in the Journal of Criminal Justice in 1987, researchers reported 259 California inmates who completed a Transcendental Meditation course had lower recidivism rates one year after release, compared to matched controls. Another study, published in The Prison Journal in 2007, examined the effects of mindfulness-based stress reduction courses on 1,350 Massachusetts inmates in drug units. Participants showed significant improvements in hostility, self-esteem, and mood disturbance, according to self-reported evaluations. Neither of these studies had randomized control

groups, but supporters of meditation say these and other studies suggest meditation may be beneficial for inmates.

How does meditation work to improve mental health or behavior? Several recent brain imaging studies suggest that meditation may alter the brain's circuitry and plasticity. In a 2005 study in *Neuroreport*, researcher Sara Lazar found that areas of the cortex, that part of the brain associated with decision-making, attention and memory, were significantly thicker in experienced insight meditators than the cortex in those in novice meditators.

A 2008 study by Richard Davidson and Antoine Lutz, both researchers at the University of Wisconsin at Madison, assessed the brain activity of experienced and novice meditators by exposing meditators to positive, neutral and negative emotional sounds during a period of compassion-focused meditation and during rest. During meditation expert meditators had stronger reactions than novices to negative sounds, such as those of a distressed woman, than to positive sounds, like a baby laughing. Additionally, the study found that during meditation expert meditators had greater brain activity in the portions of the brain that relate to processing empathy and sharing emotion.

In 1973, Bo Lozoff and spiritual teacher Ram Dass started the Prison Ashram Project, with Lozoff, in Durham, spearheading the project. The organization helped prisoners through correspondence, donation of spiritual materials and meditation classes.

Sita Lozoff of the Human Kindness Foundation says the project, now housed under her organization, was one of the first of its kind.

In 2008, according to the Department of Justice, there were about 2.3 million prisoners in the U.S. However, there are no comprehensive data on the number of meditation or Buddhist programs in prisons.

Since Bo Lozoff first started prison outreach in 1973, Sita Lozoff says the Prison Ashram Project has grown substantially and other organizations have formed to help promote meditation as well. Now, the Human Kindness Foundation, which provides meditation instruction in many of its self-published spirituality books, receives about 75 prisoner letters daily. Since 1985, the nonprofit organization has distributed more than 300,000 copies of its popular book, "We're All Doing Time," to prisoners free of charge.

Since its start in 1996, the nonprofit Liberation Prison Project in Australia has supported the Buddhist practice of more than 20,000 prisoners. The project has spawned projects in the U.S., Mexico, Mongolia, Italy and Spain. It matches prisoners with Buddhist mentors and provides Buddhism books for inmates. One of the other major organizations doing this type of outreach is the Colorado-based Prison Dharma Network. Since 1999, the network has provided books and meditation and contemplative spirituality” to more than 25,000 prisoners in more than 900 prisons around the world, according to its Web site.

“Unit 1, meditation call, meditation call in the back classroom,” announces Kim Brown, Caledonia’s prison unit program coordinator, over the prison loudspeaker system.

“Unit 2, meditation call, meditation call...”

Brown, a stout woman with a warm smile, stands in her small office as she calls inmates from each of the prison’s four units to Cunningham’s class.

Eight inmates leave chow or work assignments or cells. They come from various locations within the prison complex, passing the hole-in-the-wall canteen or the largely empty prison yard or the crowded dormitory units.

They make their way to Cunningham’s meditation circle.

The prison classroom looks like the classroom of a public elementary school with blue walls, green chalkboards and brown bookshelves filled with faded books. A pencil sharpener is mounted on the wall.

Seven of the eight men are African-American, ranging from young to middle-aged. One man, a Muslim and a newcomer to class, sports a full beard. Another man’s arm ends just below the elbow.

Cunningham is guiding eight inmates through a meditation, their sock-clad feet on the floor, eyes closed, bodies tucked into desks. One man fidgets. The rest are still.

They perch on the edges of their chairs and focus on breathing.

“Breathe in through your nose and stop. Breathe out and stop.”

After five minutes of meditation, Cunningham starts talking about managing emotions and uses his relationship with his father as an example.

“My dad would drink a fifth of gin every day,” says Cunningham. The inmates, clad in white T-shirts and white or brown pants, shake their heads.

“We would get in fights with knives,” he continues. “I could recall that and feel all sorts of boiling emotions, but [the idea is] to get to the point where feelings don’t own you.”

Born in 1936, Cunningham is easily 20 years older than any of the students and is one of only two white men in the room. He sees his anger as a connecting point.

The men are quiet and nod along.

In the hallway, Brown, the program coordinator, stands watch.

Growing up in California, Mary Smith and several of her cousins were practicing Buddhists, as was Smith’s father for a short time. As an adolescent, Smith practiced a form of Buddhism known as a chanting tradition. At 16, she officially became a Buddhist during a ceremony called “taking refuge”. Later, as a young adult, Smith abused drugs and stopped practicing Buddhism.

Addicted to crack in her 20s, Smith committed a series of burglaries to support her habit. She says she served three years in prison, as a result of two convictions for stealing televisions. Upon her release, Smith abstained from drugs and alcohol for 10 years.

But when, in 2003, a 20-year relationship ended, she fell back into her old habits.

“I started drinking again. [After a few weeks], I bought crack and smoked half a rock in a convenience-store bathroom,” she says.

Smith then walked out of the store with either a six-pack or a 12-pack of beer – police records are unclear, as is Smith’s memory – and police arrested her for petty theft. Because of her prior convictions, Smith faced a life sentence in accordance with California’s three-strikes rule. But she caught a break.

Because of Smith’s 10-year stretch without criminal charges, prosecutors in California sentenced her to four years in prison for the beer theft. However, Smith has a “silent strike” on her record, so she will serve life if she commits another crime.

Sentenced to prison in 2003, Smith began an array of activities: behavioral modification, which is in effect substance-abuse counseling, computer classes and college courses.

Her older cousin, a father figure, threatened to disown her if she didn’t return to Buddhism.

“I think he just wanted me to do something,” Smith says, who now lives in Raleigh, N.C., at the headquarters of LPP. She has close-cropped, light-brown hair and a wide face. She wears an oversized maroon sweatshirt emblazoned with the words “Mind Training.”

After her substance abuse counselor gave her a book on Buddhism, Smith wrote to the Human Kindness Foundation, as did Dimitrov, and was connected to someone who mentored her via correspondence. She also started studying with a mentor from LPP.

“Buddhism teaches about different practices for different people,” says Smith, who is seated in LPP’s headquarters in Raleigh. She participated in a chanting tradition as an adolescent, but during prison her Buddhism mentor introduced her to body

meditations. This type of meditation entails a focus on the breath and a particular body part, like the tip of the nose.

“When I got to prison, I was heavily medicated and depressed,” she says.

Like more than half of U.S. inmates, Smith suffered from mental health problems. Several psychiatrists diagnosed Smith with bipolar disorder, while others reported that she was depressed. One of Smith’s most severe problems was her reaction to other people’s anger. She says when confronted with anger, she would start shaking violently. She also experienced nightmares and sleepwalking.

“Body meditations made me able to stay in my body more and more,” says Smith, who says she is better able to meet anger with calm. She is also better at managing her depression through the use of body meditations.

Dan Dimitrov sits outside Carrboro’s Weaver Street Market in a brown button-down shirt and tan slacks, Buddhist literature in hand. He says prior to prison he was “just a really troubled guy.”

“I think everybody has had struggles and I think everyone has various levels of dysfunction,” he says. When he was young, his family fought frequently. A week before he turned 12, his brother committed suicide in the room next to him. As Dimitrov grew older, his drinking got worse.

“I was confused, angry, depressed, and sometimes violent.”

At age 31 he committed a violent crime for which he spent six years in an Ohio prison.

While in prison he started studying Buddhist teachings. He was released in 2005, at age 37.

“People inside [have] a yearning to have some sort of outside connection. There’s an element of humility and gratitude... when people from outside come in.

“I hesitate to use the word bipolar, but maybe that was what I was before [prison],” says Dimitrov.

In prison, he studied with two Buddhist teachers who taught there. One visited monthly and the other instructed students once a year. “I was doing two types of meditation when I was in prison. One was a Zen-style meditation where you’re sitting, bringing your attention to your navel, [and] don’t try to push thoughts away.” In the other meditation he visualized Buddhas and deities and chanted mantras that corresponded with these images. “Because of my past, I wanted to purify my karma, so to speak, so [I focused on] the Buddha of purification,” he says.

In prison, Dimitrov led a regimented life. He ate breakfast at 7:30 a.m. and then worked for several hours before breaking for lunch. Then, he would work some more. “Things were subject to change on a whim, like if there was a lockdown situation for a drug sweep,” he says. He worked as a literacy tutor for several years. After completing the prison’s substance abuse program, he served as one of its program aides.

Dimitrov would try to meditate during count times, relatively quiet periods four times a day when guards made sure every inmate was in his designated location. When

possible, he would go to the chapel to meditate. He credits his Buddhist practice with helping keep his moods more even-keeled.

Back at Caledonia, the prisoners are talking.

“I had to let a lot of stuff go,” says Arthur, one of the most talkative students in Cunningham’s meditation program at Caledonia. “Before, I would just react.”

Cunningham is teaching from “Meditation for Dummies.” The bright yellow book’s cheery admonitions to “open your heart” and “let go” provide a stark contrast to the surroundings. Cunningham has forgotten his notes and is using the text to guide the talk.

“A guy bumped into me in the hallway and my first reaction is to chalk him out,” one inmate adds, as another shakes his head in disbelief. “I had to say, ‘Brother, if I disrespected you, I’m sorry,’ ” the inmate says, of how he defused the encounter.

“That’s because, we think ‘I am the one,’ ” says Cunningham, by which he means people see things only from an individual perspective. He instructs the inmates to consider others’ viewpoints. People are all the same in that no one wants to suffer, says Cunningham.

Cunningham became a Buddhist after his commercial real estate business had failed. Now, the anger that he felt over that failure and resentment toward his “roaring drunk” father help him relate to prisoners.

He advises the men to develop a meditation practice by just sitting quietly on their bunks and observing their breathing patterns. He assigns homework to make sure the men read the text and think about the lesson.

Talk turns toward the program's party in December that will celebrate the inmates' completion of the basic meditation course.

"And no prison on the certificate," one inmate reminds the group, by which he means the certificates awarded will look like ones given to any meditation student.

An hour and a half has passed since class began.

The men close their eyes again and meditate for the final five minutes. Outside, the sunlight fades. Birds perched on the window's air conditioning unit chirp riotously.

After her release from prison on Dec. 29, 2006, Smith completed a one-year substance abuse program in El Monte, Calif., before accepting a job with the Liberation Prison Project. At LPP, Smith responds to initial letters from inmates, as well as mails books to inmates.

"I'm good at talking to other addicts and I like working with the prison population," says Smith.

When LPP relocated from San Francisco to Raleigh in September, Smith moved with the organization. She now lives in the organization's headquarters – an outwardly nondescript townhouse in a Raleigh subdivision – with Katy Cole, an Australian

Buddhist nun. On the second floor of the house, an altar overflows with stone Buddhas and gold bowls that hold offerings.

Prisoners initiate contact with LPP through letters. When prisoners first write the organization, they receive a book on Buddhism. After prisoners write a second letter, they receive a daily practice schedule; if they write a third time, LPP pairs them with a teacher. LPP has 200 teachers worldwide, and each mentor usually has five to 10 prisoners assigned to them. The teachers assign readings and meditations to inmates.

“When I first came to LPP, I would get so caught up in the letters because I identified too much with what they’re going through,” Smith says.

Now, it has gotten easier for Smith simply to present materials to the prisoners.

Sporting a shorn head and a nun’s red robe, Cole says inmates must confine their letters to Buddhism, as opposed to romantic relationships or other issues.

“If not, then they get kind of shunted off. [There are] plenty of groups willing to talk to prisoners about nothing,” she adds.

With class over, Cunningham’s eight students wait at their desks for the head count to clear. After all inmates are checked in, the students leave the classroom for their cellblocks.

They wait at one of the end of the hallway for the blue-uniformed guard to unlock the gate. They wait at the other end of the hallway for another guard to unlock the next gate.

They walk down the narrow stairs and past the men in the dormitory unit, where about 50 white-sheeted bunks are lined up in tight rows. They ignore a teeming mass of men in the dormitory unit, some of whom call out to the meditation students.

The noise level grows louder.

They make their way to their bunks.

Following his release in 2005, Dimitrov lived at his parents' home in Ohio and worked as a welder. When he was laid off, he traveled to North Carolina in January 2008 to volunteer at Human Kindness Foundation and ended up finding a job in the area.

Dimitrov now works as a substance abuse counselor in Chapel Hill. He continues to volunteer for the Foundation, where he reads letters from prisoners and sends them books and a few words of encouragement. Since his arrest 10 years ago, Dimitrov has refrained from drinking and smoking.

At the substance abuse center, his efforts to teach meditation have not always gone well. "Men don't seem to be open [to it] as much as women. Addicts, especially, are not really open to change," he says.

He has managed, however, to interest a few of his clients in meditation.

"One guy, he took a Buddhist meditation based 12-step [Alcoholic Anonymous] meeting, and he really, really liked it and he's Catholic."

Both Dimitrov and Smith acknowledge challenges in maintaining a meditation practice after being released.

“I used to think my practice completely degenerated once I came out [of jail]. Now, I think it’s just changed,” says Smith.

“If someone can meditate in prison, they can do it anywhere,” Dimitrov says, noting that prison is “stressful, loud, and angry.” Yet, prison inmates are spared the distractions of day-to-day living, like full-time employment and errands, which can take one away from studying and meditating.

“A lot of guys really use religion as a crutch in prison, they become more Christian, more Muslim, [but] when they get out they get too distracted.”

Dimitrov cites the case of a fellow Buddhist in prison. “When he came out [of prison], he stopped practicing. I think [because of] the distractions of worldly things, relationships, drinking. He went back to prison,” he says.

Yet, Dimitrov says, “I’ve managed to stay connected.”

Both meditation teachers and former prisoners say it can be difficult to work with prison clergy, who are primarily Christian, although prison administrations’ openness to Buddhism and meditation varies widely.

“In Ohio, there was a lawsuit in the early 1990s to allow the Buddhists to come in [to prison],” says Dimitrov. “It was an ongoing struggle.” However, by the time he entered the corrections institution in 1999, there was an established meditation program.

Smith had difficulty obtaining Buddhist materials in her California prison, citing resistance and stonewalling from prison clergy. She even tried to join the Native

American spirituality group, thinking that she could get access to her materials through that group. She quickly realized that they also had difficulty receiving their teachings.

“Eventually, the Presbyterian chaplain stopped trying to convert me,” says Smith. Because she had a good relationship with some of “his disciples” in the substance abuse program, the chaplain became more flexible with Smith and allowed her better access to Buddhist materials. There were also several Buddhist, or “Buddhist-minded,” counselors at prison who encouraged Smith’s interest. Cole, Smith’s colleague at LPP, says she finds many chaplains supportive of the organization’s Buddhist outreach.

When the Lozoffs, who now run the Human Kindness Foundation in Durham, first started their outreach in the mid-1970s, Sita Lozoff says prisoners and prison officials used the words “yoga” and “yoghurt” interchangeably, because they were unfamiliar with the practice of yoga. Sita Lozoff experienced some resistance from prison officials opposed to non-Christian spiritual outreach. While that resistance has lessened as Buddhism, general meditation and other Eastern religion programs become more common in prison, she still has had difficulties arranging recent prison visits for her husband to give meditation workshops in Texas, where prison chaplains accused the Lozoffs of “doing the Devil’s work.”

“Murderers are my best students,” says Cunningham. He says murderers who attend his class usually are “enormously regretful” for their violent acts, which were often committed impulsively.

Similarly, Sita Lozoff originally thought that interest in the Human Kindness Foundation’s books would primarily come from “young kids who had received jail sentences for pot, LSD, but it started being murderers, thieves, right away,” she says.

At Caledonia, inmates voluntarily participate in Cunningham's meditation program. Even though his instruction is not explicitly Buddhist, the prison administration considers it a religious program. Any inmate may participate, regardless of whether or not he has had infractions for bad behavior.

When prisoners seek release from prison, "it looks good for them to take classes," says Caledonia's program coordinator Brown. She considers participation in *any* prison program an indicator of future success. "I would say that most [inmates who] don't participate, don't want to work or do anything, they come back."

Cunningham says he derives great satisfaction from working with prisoners. Sita Lozoff and Liberation Prison Project's Katy Cole echo this sentiment, saying the inmates that they work with are hungry to improve their minds and grateful for interaction with the outside world.

"I think the big problem is that general population is not involved with prisons," Cunningham says. After all, he adds, "Unless inmates are going to be there for life, what are you going to do with them?"

Chapter Six

Down Dog for the Downed Soldier

On June 10, 2008, a Liberian teenager drowned in Lake Quinsigamond in Worcester, Mass. John Callan, a military man turned Massachusetts' game warden, assisted in the investigation, but it cost him.

“When I pulled him out [of the water], it put me back to Africa,” Callan, 48, said.

Earlier in his career, Callan was one of seven Marines guarding the American Embassy in Akra, Ghana. Stationed in Ghana during a tumultuous time – there were four attempted coups – he witnessed shelling of the capital and assisted in recovering several bodies of people who had drowned.

Following the drowning of the teenager, Callan received a post-traumatic stress disorder diagnosis. A counselor at the local Veteran's Center told him, “Welcome to the club,” and recommended that Callan take a yoga class for veterans.

For many active-duty military personnel and veterans, yoga serves as both a treatment and an exercise. Yoga's rising popularity in military circles stems from needs borne of war trauma and the growing acceptance of yoga throughout the general public.

Yoga proselytizers, however, must overcome the perception of yoga within the military community.

Although small-scale and scattered throughout the country, yoga classes for wounded troops returning from Iraq and Afghanistan are being offered at military rehabilitation centers, bases, and VA medical centers. Private yoga studios and nonprofit organizations also are promoting the practice among active-duty military personnel and veterans.

The Department of Veterans Affairs reported that about 11 to 20 percent of veterans of the Iraq and Afghanistan wars have post-traumatic stress disorder, as well as about 30 percent of Vietnam veterans. In addition, the Department of Defense reported 960 individuals suffered limb amputations as a result of service in Iraq and Afghanistan. Many veterans suffer from both major physical trauma and PTSD.

“In the past, most of the [wounded troops] would have died, but now we have such remarkable medicine and evacuation methods,” said retired rear admiral Tom Steffens, a former U.S. Navy Seal.

As they increasingly deal with large numbers of troops with serious mental and physical health problems, military rehabilitation and VA medical centers have adapted health care programs to serve these needs.

“As they started studying PTSD and realizing [its] impact” in the most severely injured recent veterans, Steffens said, “they realized it impacted people who weren’t as badly injured, and then they realized that vets from WWII and Vietnam were suffering from this.”

“I think the military’s becoming a little more savvy,” said Dan Libby, a Yale University postdoctoral associate who works with PTSD-afflicted veterans in West Haven, Conn. “They’ll try anything that might work.”

In 2006, the Department of Defense conducted unpublished research on iRest – a form of yoga nidra – at Walter Reed Army Medical Center in Washington, D.C., said Richard Miller, a psychologist who developed iRest and directs the Integrative Restoration Institute. Since then, VA facilities in Miami, Kentucky, Ohio, and Chicago have adopted the iRest program.

“The military didn’t like the term yoga nidra, so I named it integrative restoration [or iRest],” said Miller. He is also careful not to use religious references in his program.

In iRest, teachers guide students through deep relaxation and meditation as a part of a ten-step protocol Miller developed. Generally, yoga nidra teachers use guided imagery and other techniques to bring students into deep relaxation and meditative states.

A clinical study of yoga for PTSD, funded by the Department of Defense, started in August 2009 at Brigham and Women's Hospital in Boston and is ongoing. A small 2008 study published in *The Journal of Alternative and Complementary Medicine* found that yoga helped veterans manage chronic lower back pain.

The military is also investigating meditation and other mind-focusing techniques as ways to enhance soldiers’ ability to perform and cope with battle.

One program already working toward that goal, called “Warrior Mind Training,” is offered at 11 military bases. Designed by four civilians, the program uses techniques similar to those found in yoga, meditation and martial arts to help soldiers relax and manage stress.

“I went to yoga to help get my mind right,” said Callan.

He started attending a veterans’ yoga class at Central Mass Yoga Institute in West Boylston, Mass., in late 2008. His teacher, Lucy Cimini, teaches a program called Yoga Warriors for veterans with PTSD and other mental health challenges.

Callan credited yoga, particularly breathing and meditation techniques, with helping him deal with his mental health issues.

“I always feel great after I get done.” He continues to practice now that he has relocated to Morrisville, N.C.

Alvaro Matta, a former Marine who served during the first Gulf War, learned yoga as a child from his mother but didn’t practice for years. After meeting a fellow Marine and yoga instructor, Srikanth Rajagopalan, Matta started practicing again two years ago.

“Through the practice, I feel good about myself, I sleep a lot better than when my mind is wandering through my past military service,” Matta said. Matta and Rajagopalan are both part of a nonprofit organization, Semper Fit, which specializes in teaching yoga to veterans and is based in Baltimore.

Some in-patient PTSD programs at VA medical centers, including those in Newington, Conn., and Salisbury, N.C., also offer yoga classes as part of treatment.

Robin Gilmartin directs an in-patient PTSD program that offers yoga for veterans and active-duty military in Newington.

“Yoga helps them to learn to activate what’s essentially a counter to flight or fight, which is the relaxation response,” Gilmartin said. “Yoga comes in to really help them with hyperarousal, [including] symptoms that have to do with physiological arousal, [like] rapid heartbeat, [and] panic in some cases.”

Yoga nidra particularly helps with PTSD, Gilmartin said, because it aids patients’ ability to sleep, which is one of the most significant problems for sufferers of the disorder.

Miller said iRest, a form of yoga nidra, helps with relaxation and allows PTSD-sufferers to process emotions and beliefs that keep them from overcoming trauma.

“If it’s really PTSD, it can take years to fully resolve,” said Miller. “We’re under no illusion, [yet] many of [the yoga students] have transformative experiences within a matter of a few weeks.”

Dan Libby, the postdoctoral associate at Yale, and Suzanne Manafort, the yoga teacher for the Newington program, are developing a teacher’s manual on yoga for PTSD.

“I think the primary benefit [from yoga is] teaching veterans how to regulate their autonomic system,” Libby said, which controls heart rate, digestion, respiration rate and other functions. He said yoga teaches PTSD-sufferers to decrease their anxiety and regulate their nervous system through regulation of the breath.

“A lot of vets have this tendency not just toward flight or fight but also towards freezing,” Libby said, by which he meant avoiding activities. He said yoga helps lessen this freezing tendency that leads PTSD-sufferers to isolate themselves at home and remain inactive.

“The first two or three weeks they come [to class], they think it’s going to be some sort of ‘woowoo’ thing and they don’t really look me in the eye,” Manafort said. “By the fourth week [of the 13-week program], they seem to be calmer, by the sixth or seventh week they’re starting to look me in the eye.”

“There’s not much research on yoga for PTSD,” Libby said. Yet, “if you call around there’s yoga being done at VAs everywhere. It’s done piecemeal here and there... under different contexts, with varying levels of training on the part of the yoga teacher.”

Libby and Manafort said they hope their manual will help provide guidance for yoga teachers, so they can teach PTSD-sufferers safely, without causing flashbacks.

The adaptation of yoga for PTSD-inflicted service members and veterans, Miller said, reflects the great need for treating this population.

“A lot of interventions medically come about because of the needs that come out of a war,” said Miller. “[The military’s] open now. They’re looking for inexpensive protocols and ... realizing that a lot of the traditional treatments [for PTSD] are not very effective.”

“I think the openness [is also] because most of the military at the top echelon that I work with have seen the effectiveness of meditation personally,” he added.

Tom Steffens, the retired Navy Seal and rear admiral, started practicing yoga around 1998 after tearing his bicep. Steffens now works as a consultant for the military and the defense industry.

“I took a Bikram yoga class, and it resonated with me,” Steffens said. “The more I did it, the more it improved injuries that I had from a variety of things, [ranging] from helicopter crashes to basketball.”

Bikram yoga, developed by Bikram Choudry, is practiced in a room kept heated to at least 105 degrees Fahrenheit. This copyrighted form of yoga consists of a 26-pose sequence, repeated twice in a 90-minute class, and breathing exercises.

Soon, Steffens was taking classes six times a week and scouring stores for yoga books.

“Like anything I do, I want to be a master of it.”

Steffens also practiced Iyengar yoga, a precise discipline that appealed to the exacting nature developed in him by the military. Developed by Yogacharya B.K.S. Iyengar, this yoga style emphasizes alignment in the physical postures and uses props, such as belts and blocks, to help the practitioner attain the correct pose.

“The more I understood it, the better it helped me understand my body, which I [had] thought I understood very well,” Steffens said.

Yet, Steffens kept his new hobby under wraps initially.

“When I started doing [yoga], I was working at the headquarters of the special operations command. I didn’t tell anybody about it. I was the closet yogi.”

Eventually, a fellow yoga student outed him to his superiors at a baseball game. His boss was shocked and exclaimed, “Yoga!”

“He clearly had this stigma about it,” Steffens said.

In 2006, Steffens visited a recuperating Navy Seal at Walter Reed Army Medical Center in Washington, D.C., a facility where many active-duty military members rehabilitate from amputations and other major trauma.

“There’s all these guys and an occasional woman on bicycle machines and step machines trying to get their strength back,” Steffens said, and “I said, ‘How much stretching do you do?’ ”

He recruited Annie Okerlin, one of his yoga teachers in Tampa, to fly to Walter Reed to instruct the rehabilitating soldiers and their caregivers. This program, dubbed “Exalted Warrior,” now operates at the James A. Haley Veterans Hospital in Tampa and the Brooklyn VA in New York City.

“A lot of the guys said, ‘I can’t remember the last time I was so relaxed,’ ” said Okerlin. The soldiers were also surprised that they got such a good workout from yoga, she recalled.

Teaching severely wounded soldiers requires instructors to adapt some of their practices from a traditional yoga class.

“Annie would say things like, ‘Tilt your pelvis, put your weight on your femurs,’ and a guy would raise his hand and say ‘I don’t have any femurs,’ ” said Steffens, who participated in some of the classes.

Okerlin, who now teaches weekly at the Haley Veterans Hospital, uses blocks, straps and other props to help injured soldiers get into poses. She also tailors classes to the individual’s needs, such as shoulder work for those in wheelchairs and gentle movements for those with spinal cord injuries.

“Everyone needs core work, especially amputees,” she said.

Breath work is also a major focus in her classes because many of the physically injured also have symptoms of PTSD. She's found snipers are already familiar with breath regulation.

"Snipers have very similar breath work techniques as yogis," said Okerlin.

In addition to aiding those with acute medical issues, Steffens also believes yoga helps veterans deal with ongoing medical issues resulting from war trauma.

Steffens recently spoke to a Vietnam veteran with a prosthetic leg and multiple related surgeries.

"What I realized was this was a lifelong problem [and] yoga is a life sport, something people can do literally until they die," he said.

Steffens and Okerlin said they both hope to expand these yoga programs to other military rehabilitation centers.

"This is my new passion – bringing yoga to a population that never thought they wanted it," said Okerlin. "But once they get it, they love it."

Others are spreading yoga to the military and veterans, both in and out of military settings. To do so, they must create a comfortable environment to practice yoga and overcome the stigma of yoga within military circles.

Callan, Matta and Miller said the perception of yoga as "girly" and religious is a barrier to the practice within the military. Yet, they said that attitude has lessened as yoga has become more common within the U.S.

“If you look around at basic advertisements, you see that yoga and meditation have infiltrated every aspect of our culture,” said Miller.

In founding Semper Fit, Matta and co-founder Elijah Sacra said they thought service members and veterans would be most open to learning yoga from those with a military background.

Matta now touts the idea of yoga to other Marines.

“We have to teach them [yoga] before they go to war so they don’t come back as fucked up,” said Matta. Then, “a better society comes back, with less visits to the hospital, less PTSD.”

In a program that many would consider counter to the peaceful practice of yoga, Semper Fit uses yoga not just to help soldiers cope with the effects of war, but also to help make them better fighters.

“If you’re more grounded and centered, you’re going to be a better warrior, you’re going to shoot straighter,” said Elijah Sacra, also a former Marine.

Sacra acknowledged that promoting yoga as an enhancement for warfare “may raise some hairs on the back of some people’s necks.” However, he said he believes that the yogic tenet of nonviolence does not prohibit yoga as part of war training.

He and Matta said yoga’s thrust of nonviolence is really about being nonviolent towards the self.

“In the Bhagavad Gita,” which is one of the seminal yogic texts, “a lot of the text occurs on a battlefield, and some of the main characters are warriors,” Sacra said.

“There’s probably some merit,” to the idea of yoga for warfare, said Steffens, who cited yoga’s calming techniques that enhance soldiers’ ability to sit during an ambush.

“When you realize someone’s going to kill you [however], then you really pay attention,” he said.

Miller said he has been approached by the Navy Seals to see if iRest could help the Seals be more resilient while undergoing an anti-torture program, although no plans have been formalized to include iRest in that program.

In a less controversial effort, yoga teacher Paul Zipes founded Yoga for Vets in 2007. The nonprofit organization compiles a list of studios and gyms that offer four free yoga classes to any veteran who served in combat. Zipes said more than 150 locations participate in the program.

Callan and Matta both agree that a class with fellow members of the military offers the most comfortable environment.

“I was lot more comfortable when I was in a room full of vets,” said Callan.

Matta, the former Marine, said he also found it difficult to move from a one-on-one class led by a Marine to the environment of a mostly-female yoga studio class.

After moving to Morrisville, N.C., Callan lost access to a veterans or PTSD-specific class. That was one of the motivations for Callan’s wife, Diane, to organize a yoga teacher training for instructors to learn how to teach yoga to veterans with PTSD, scheduled for April 2010.

“I was looking for something that was similar to what we had, [but] there’s nothing out here,” Callan said.

“The need is so great here in North Carolina, specifically, [with] six major military bases here [and] a lot of people who’ve done multiple tours,” he added.

Callan said while many in the military are hesitant about yoga, reaction to the practice varies.

“The common military attitude is ‘Expressing your emotions is for sissies,’ so we have to overcome that,” Miller said. “[But] when a soldier sees that [others] healed through their PTSD, then we start getting the self-referrals.”

“After I started yoga, I’ve talked to people who say ‘You’re doing *what?*’ ” said Callan. “The ones who have PTSD issues are like ‘Really, where can I go?’ ”

Chapter Seven

Teaching Yoga to the Military

Increasingly yoga instructors are helping wounded soldiers from the Iraq, Afghanistan and even the Gulf War cope with war trauma. They are also teaching both active and retired military personnel how to use relaxation and breathing techniques to improve their mental and physical health, including their core strength.

A 2008 study by the RAND Corporation found that about 19 percent – a total of 300,000 – returning troops from Iraq and Afghanistan suffered from post-traumatic stress disorder or PTSD. About 10 percent – or 232,200 – of Gulf War veterans and 30 percent of Vietnam veterans – or 2,632,000 – suffered from the disorder, according to the Department of Veterans Affairs.

“Trauma occurs when an event happens that’s uncontrollable, unpredictable and it’s threatening,” said Dan Libby, a Yale University postdoctoral associate, who works with veterans who have PTSD at a VA hospital in West Haven, Conn. “You have to do everything to make sure that [the yoga class] is controllable, predictable and non-threatening.”

As part of an effort to treat PTSD, Walter Reed Army Medical Center in Washington, D.C., offers iRest, a form of yoga nidra; the center also has a separate asana yoga program for the physically wounded and their caregivers. VA facilities in Miami, Kentucky, Ohio, and Chicago offer iRest, said Richard Miller of the Integrative Restoration Institute, who developed the program.

While there are no comprehensive data on military or veterans yoga programs for PTSD, the inpatient PTSD treatment programs at VA medical centers in Newington, Conn., and Salisbury, N.C., do offer yoga.

Research studies are also underway to examine yoga as a treatment for military personnel with the disorder. The Department of Defense funded an unpublished 2006 study of iRest's effectiveness for soldiers with PTSD rehabilitating at Walter Reed Army Medical Center. It also funded a clinical study of Kripalu Yoga effectiveness for veterans with PTSD. That study, started in August of 2009 at Brigham and Women's Hospital in Boston, is ongoing.

Robin Gilmartin, director of a PTSD-treatment program in Newington, Conn., said sufferers experience some or all of the disorder's 17 symptoms, which include sleeplessness, nightmares and irritability.

"PTSD is primarily hyperarousal," said Libby.

As a result of hyperarousal, Libby said, individuals hyperreact to a trigger, because they believe that the trigger indicates imminent danger. Gilmartin said symptoms of hyperarousal include rapid heartbeat and panic. Individuals in a hyperaroused state have difficulty recognizing signals that indicate safety, which would counteract the effects.

That's where yoga comes in.

"Yoga gives [PTSD-sufferers] techniques to decrease their anxiety," Libby said.

Gilmartin and Miller said that decreasing hyperarousal is an important piece of addressing PTSD, but sufferers must also address beliefs about themselves to heal, beliefs like "I must have done something to deserve what happened to me."

Because of the special needs of PTSD sufferers, language and touch used in traditional yoga classes might have to be avoided. To aid yoga instructors who are working with military groups, Libby and Suzanne Manafort, a yoga teacher for the PTSD program in Newington, are developing a teacher's manual on yoga for PTSD.

Manafort started teaching yoga to veterans and active-duty military members in the PTSD program two years ago. Patients in this 13-week residential program attend yoga class once a week.

"You have to watch how you speak. They need to know where you are [in the room] at all times," said Manafort.

Manafort said she respects students' physical boundaries.

"In most yoga classes you touch all your students; you would never do that in a class full of veterans [with PTSD]," she said.

Both Manafort and Libby said teachers need to provide options for their students.

"In a vet class, you might want to let them to do things at their own pace, such as, 'When you're ready, you might want to try lifting your arms,' " said Libby.

Manafort also said instructors should make closing one's eyes optional as many people with the disorder prefer to practice with their eyes open.

Manafort and other teachers emphasized the importance of breath work for this group.

“A lot of them disassociate, so I feel like breath is the biggest tool that brings them back in the body,” she said. She teaches them three-part breath, ujjayi and alternate nostril breathing.

Yoga nidra, or yogic sleep, particularly helps those with PTSD, Gilmartin said, as sleeplessness is one of the most significant problems for PTSD patients and worsens other symptoms of the disorder.

“Anything that improves sleep [the patients] find really valuable,” said Gilmartin. Many of the patients use yoga nidra CDs that Manafort provides to help them sleep at night, Gilmartin said.

The iRest program, which is a form of yoga nidra, is a ten-step protocol that uses deep relaxation and guided meditation to help patients with PTSD.

“I’m helping them welcome their beliefs and use their beliefs in service to their healings,” Miller said. Rather than dismissing or suppressing emotions and thoughts, he said, the iRest program tries to help a PTSD-sufferer “come to the realization that there wasn’t anything I could do [about the trauma] and that I did the best I knew how.”

Choosing language carefully also helps ensure a safe and helpful experience.

“How do we avoid using words that might trigger a flashback or some dissociative experience?” asked Libby. “Savassana is called corpse pose,” he said, as an example. “Personally I would never use the word ‘corpse’ in a yoga class for veterans.”

Annie Okerlin teaches yoga at the James A. Haley Veterans Hospital in Tampa, Fla., and has adapted her teaching of yoga nidra to veterans.

“One of the scripts we use [in generic yoga classes] talks about ‘call up the sensation of pain,’ ” she said. Because the “vets can flash[back] very quickly,” Okerlin said she does not use the phrase “sensation of pain” in their class because it could bring up a traumatic memory.

She said she doesn’t want her student to “be the guy who had a breakdown in front of their buddies.”

John Callan, a veteran diagnosed with PTSD, started taking a veterans’ yoga class at Central Mass Yoga and Wellness, Inc., in West Boylston, Mass., in 2008.

He appreciated that the teacher, Lucy Cimini, was sensitive to his needs, such as not burning candles in the studio, which can serve as a trigger for veterans who have had negative experiences with fire.

Yoga teachers should also solicit feedback from mental health staff and their students to adapt their teachings to the needs of their clients.

“I think one of the things that makes Suzanne [Manafort] effective is that she has a natural sensitivity to people’s anxieties,” said Gilmartin. “Some [things] she’s done instinctively, or she’s learned through trial and error, or we’ve pointed out to her.”

For instance, an outside walking meditation Manafort led caused some veterans in the Newington program to feel too exposed.

“There were too many similarities to an infantry situation,” said Gilmartin, of the exercise of walking in a line.

Libby, who is starting to teach a veterans’ class in West Haven, recommended having a clinician available in case a student experienced a flashback or other traumatic

event during class. If that were not possible, he advised yoga teachers to have health care referrals on hand.

Several military rehabilitation centers offer yoga classes to help soldiers with physical injuries. At Haley Veterans Hospital, Okerlin teaches soldiers recuperating from severe injuries ranging from amputations to burns.

“One of the things that we found instantly [was] that giving them the tool of using their breath, deepened their physical therapy,” Okerlin said. Breath work “gave them control over something that felt pretty uncontrollable,” she said.

Beyond that, Okerlin tailors her teachings to the injuries of the particular soldier. Drawing on her background as an Iyengar student, she relies on props like straps and blankets.

“With an amputee, if he’s already working on the prosthetic [and] he’s having a bad time of it, I would say he needs to work on his hip flexors,” Okerlin said.

When treating veterans or soldiers in wheelchairs, instructors should work on shoulders, she said. With a traumatic brain injury, depending on the intensity of the injury, she recommended supported back bends.

“Everyone needs core work,” said Okerlin. “Especially amputees.”

In Okerlin’s hour-long class, she starts off slowly, works her students hard and then provides a 15- to 20-minute deep body relaxation.

Before starting to teach her veterans' class, Okerlin consulted a fellow yoga teacher who is a nurse and a psychologist for advice on teaching to veterans’ needs.

Several former soldiers who became yoga teachers provided an inside perspective on teaching yoga to active-duty military and veterans. They said two major barriers to

veterans' openness to yoga was the perception that the practice is "girly" and that it is religious.

Elijah Sacra, a former U.S. Marine who co-founded Semper Fit, a nonprofit organization that specializes in teaching yoga to military veterans, downplays the religious aspect of yoga in his classes.

"When I teach the veterans, I don't have them 'Om.' I don't use Sanskrit. I don't play music that's too New Agey," Sacra said. "I personally love all that stuff, [but] most of them are coming from a place where if they think there's something Hindu, I'll lose them."

Sacra teaches yoga in Baltimore, with clients ranging from a World War II veteran who needed to improve his balance to recent veterans struggling with PTSD.

"I talk in a voice like I'm having a conversation, not in a soft voice," he said.

Sacra also tells fellow soldiers and veterans that yoga can be a good physical workout, too.

Kylo Anderson, who spent eight years in the Navy as a religious program specialist, now teaches yoga in San Diego. He tries to counteract the perfectionist tendencies of those with a military background, who may push themselves too hard.

"I try to tell them it's okay to stay at level one. You don't [need to] go from level one to level four in the first half hour," said Anderson. "There's no need to prove that we're so hard-core that we can't relax or let our mind go at ease for an hour or so."

Chapter 8

Reflection

Working with nontraditional populations – the military, children, inmates – creates difficulties in obtaining access. A number of my story ideas fell through because I could not obtain permission to interview sources and observe them in action.

Additionally, obtaining permission to videotape is much more difficult than obtaining permission to simply conduct an unrecorded interview. Caledonia Correctional Institute, for example, would allow me to observe the meditation class, but they do not allow recording of any kind. I also ran into difficulty obtaining permission to videotape a yoga class in a military setting. Part of the reason for this problem, which I did not realize when starting this thesis, is that many of the military yoga programs are for those with post-traumatic stress disorder. Not only are many people reluctant to be open about mental health issues, but also a new person with a large camera in a class for PTSD-afflicted patients could create a feeling of vulnerability in the patients. HIPAA regulations, which set standards for patient privacy, also make it difficult to cover a story

set in a medical environment. For this reason, I changed course and decided to write text stories.

In obtaining access for the meditation story, I relied on established organizations, particularly Liberation Prison Project and Human Kindness Foundation, to provide contacts, as they are part of a network of people who know one another and do this type of work. Additionally, I believe that I was able to get access to a prison because the prison already had an established and trusting relationship with long-time volunteer Herb Cunningham. He was also able to ensure that I completed the appropriate paperwork to enter the facility.

As for the military story, I relied on my background as a yoga teacher to originally make contact with other yoga teachers who worked in this field. I also emailed a list serve of yoga teachers to obtain leads. This was helpful and allowed me to locate some of these yoga programs and interview both yoga teachers and program administrators. Additionally, I saw a flyer advertising the yoga teacher training for working with wounded warriors, organized by Diane Callan, who was one of the most useful sources of contacts.

One of the most helpful things that I did to obtain sources on the military story was to use social media. Yoga for Vets, a nonprofit organization, has a fan page on Facebook. Paul Zipes, the founder of Yoga for Vets, sent out a message on my behalf to his Facebook contingent. Those who responded, including military service members, veterans and researchers, were people who wanted to discuss these issues. In terms of the mental health aspect, I treaded softly and looked for those individuals who wanted to share their stories.

One unexpected story that arose out of this research was the story for yoga teachers on guidelines for teaching to service members and veterans. As I researched the yoga and the military story, I interviewed many yoga teachers, as well as military service members and veterans, who described adaptations that they employed to teach this group. I believe that the story for yoga teachers contains practical information that could be published in a yoga trade journal.

I also realized the importance of asking obvious questions during these interviews, although I could have done so with more consistency. For instance, it helps to ask the obvious questions, like: “What is PTSD?” or “How do you meditate?” Although it seems obvious, I now realize the reader may not understand these terms or what these practices look like.

If I decided to do this project again, I would try to be more strategic in my attempts to gain access to a story, particularly if I wanted to do video or some other multimedia component. For instance, I eventually was able to interview a retired rear admiral, Tom Steffens, who initiated the yoga program at Walter Reed Army Medical Center. If I had contacted him earlier in the process, he might have been willing and able to secure permission for me to observe or videotape at Walter Reed or some other yoga program.

Stories on yoga and meditation for nontraditional populations, while covered in the media, could still be expanded greatly. Two areas that I did not explore in my series, which I think are interesting trends, are the use of yoga for sexual assault survivors and in schools. One component of the military story, the potential for yoga and meditation to be

used to enhance warfare, could become a more in-depth, stand-alone story and include examples from the Indian Army.

Moreover, these stories would lend themselves well to the video format. In particular, Walter Reed Army Medical Center does not allow access to students, but perhaps Walter Reed would allow access to a mainstream media outlet to cover its yoga programs. An audio piece of a medical professional explaining how yoga and meditation work to help particular illnesses or conditions would be a useful component to a broader piece. Some prisons hold multiple-day meditation retreats for the inmates, which would make a fascinating documentary. However, the journalist would need to have an exceptionally accommodating prison administration to be allowed to shoot such a program.

Finally, with several studies on yoga's efficacy in helping military service members and veterans underway, a future story could report on the results of those studies.

Bibliography

Andrews, Michelle. "Why You Shouldn't Forget to Meditate." US News & World Reports (26 December 2005-2 January 2006).

Associated Press, "'Warrior Mind Training' Helps Troops Stay Calm." (7 October 2008). <http://www.msnbc.msn.com/id/27072979/>.

Barnes P, Powell-Griner E, McFann K, Nahin R. "CDC Advance Data Report #343. Complementary and Alternative Medicine Use Among Adults: United States, 2002." (27 May 2004).

Bharawadj, Ankitha. "Yoga Studios are the New Prison Rec Yards." National Public Radio (30 October 2008).
<http://www.npr.org/templates/story/story.php?storyId=96329357>.

Bleick, Catherine R., and Allan I. Abrams. "The Transcendental Meditation program and criminal recidivism in California." Journal of Criminal Justice 15.3 (1987): 211-230. PsycINFO. EBSCO.

Campoy, Ana. "Military Hopes 'Resiliency Campus' Will Bolster Recovery." The Wall Street Journal. (November 8 2009).
<http://online.wsj.com/article/SB125764903767336511.html>.

DiStasia, Susan A. "Integrating Yoga Into Cancer Care." Clinical Journal of Nursing Oncology 12.1 (2008): 125-130.

Dobrof, Susan. "MS, yoga, and me." Inside MS 24.4 (2006): 48-52. Academic Search Premier. EBSCO.

Ginty, Molly M. "Yoga for At-Risk Populations." Yoga Journal. (Date Unknown).
http://www.yogajournal.com/for_teachers/2628

Groessi, Erik J. et al. "Yoga for Veterans with Chronic Low-Back Pain." The Journal of Alternative and Complementary Medicine, 14.9 (2008): 1123-1129.

Hawkins, Mark A. "Section I: Theory and review. Effectiveness of the Transcendental Meditation program in criminal rehabilitation and substance abuse recovery: A review of the research." Journal of Offender Rehabilitation 36.1 (2003): 47-65. PsycINFO. EBSCO.

Holmes, David S., Sheldon Solomon, Bruce M. Capps, and Jeffrey L. Greenberg. "Effects of Transcendental Meditation versus resting on physiological and subjective arousal." Journal of Personality and Social Psychology 44.6 (1983): 1245-1252. PsycINFO.

Ivanovski, Belinda, and Gin S. Malhi. "The psychological and neurophysiological concomitants of mindfulness forms of meditation." *Acta Neuropsychiatrica* 19.2 (2007): 76-91. Academic Search Premier. EBSCO.

James, William. "The Varieties of Religious Experience: A Study in Human Nature." New York: Simon & Schuster, (2004).

Janakiramaiah, N., B. N. Gangadhar, P. J. Naga Venkatesha Murthy, M. G. Harish, D. K. Subbakrishna, A. Vedamurthachar, "Antidepressant efficacy of Sudarshan Kriya Yoga (SKY) in melancholia: a randomized comparison with electroconvulsive therapy (ECT) and imipramine," *Journal of Affective Disorders*, Volume 57, Issues 1-3, (January-March 2000), Pages 255-259.

Jeffrey, Terence P. "Federal Gurus are Funding Yoga Studies." *Human Events* (25 July 2005).

Klein, Julia M. "Stretching the Boundaries." *New Jersey Monthly* (11 March 2008).

Lazar SW, Kerr C, Wasserman RH, Gray JR, Greve D, Treadway MT, McGarvey M, Quinn BT, Dusek JA, Benson H, Rauch SL, Moore CI, Fischl B. "Meditation experience is associated with increased cortical thickness." *NeuroReport*, (2005); 16: 1893-1897.

Lewis, Christen. "Yoga and Pilates Studios Weather Recession." *Fitness Business Pro* 25.7 (2009): 10-11. Business Source Premier. EBSCO.

Love, Robert. "Fear of Yoga." *Columbia Journalism Review* 45.4 (2006): 80-90. Communication & Mass Media Complete. EBSCO.

Lutz A, Brefczynski-Lewis J, Johnstone T, Davidson RJ "Regulation of the Neural Circuitry of Emotion by Compassion Meditation: Effects of Meditative Expertise." *PLoS ONE* 3(3): e1897. doi:10.1371/journal.pone.0001897. (2008).

Modern Healthcare. "Studies no stretch for NIH." 36.22 (2006): 36. Academic Search Premier. EBSCO.

Nahin, RL, Barnes PM, Stussman BJ, and Bloom B. "Costs of Complementary and Alternative Medicine (CAM) and Frequency of Visits to CAM Practitioners: United States, 2007." *National health statistics reports*; no 18. Hyattsville, MD: National Center for Health Statistics. (2009).

National Institute of Health. "More Than One-Third of U.S. Adults Use Complementary and Alternative Medicine, According to New Government Survey." National Center for Complementary and Alternative Medicine. (27 May 2004).

National Public Radio. "India's Army Takes New Position on Yoga." (4 June 2008). <http://www.npr.org/templates/story/story.php?storyId=91143066>.

Oz, Mehmet. "Say 'Om' Before Surgery." Time. (20 January 2003).

Pew Forum on Religion and Public Life. "Summary of Key Findings: Report 1: Religious Affiliation." (13 August 2007). <http://religions.pewforum.org/reports>.

Project Air. "What is Project Air?" Date Unknown.
http://projectair.org/about/what_is_1.html.

Rainforth, Maxwell V., Charles N. Alexander, and Kenneth L. Cavanaugh. "Effects of the Transcendental Meditation Program on Recidivism Among Former Inmates of Folsom Prison: Survival Analysis of 15-Year Follow-Up Data." Journal of Offender Rehabilitation 36.1-4 (2003): 181-203. Academic Search Premier. EBSCO.

Rivers, Eileen. "A Breath of Hope." The Washington Post. (6 May 2008).
<http://www.washingtonpost.com/wpdyn/content/article/2008/05/02/AR2008050203426.html>.

Rochman, Bonnie. "Samurai Mind Training for Modern Warriors." Time. (6 September 2009). <http://www.time.com/time/nation/article/0,8599,1920753,00.html>.

Rojas, Neal L., and Eugenia Chan. "Old and new controversies in the alternative treatment of attention-deficit hyperactivity disorder." Mental Retardation & Developmental Disabilities Research Reviews 11.2 (2005): 116-130. Academic Search Premier. EBSCO.

Saper, Robert B., Karen J. Sherman, Diana Cullum-Dugan, Roger B. Davis, Russell S. Phillips, and Larry Culpepper. "Yoga for Chronic Low Back Pain in a Predominantly Minority Population: A Pilot Randomized Controlled Trial." Alternative Therapies in Health & Medicine 15.6 (2009): 18-27. Academic Search Premier. EBSCO.

Stone, Michael. "Yoga for a World Out of Balance: Teachings on Ethics and Social Action." Boston, Massachusetts: Shambhala Publications, (2009).

Street Yoga. "Mission." Date Unknown. <http://streetyoga.org/about/mission>.

Toncatto, Tony and Linday Nguyen. "Does Mindfulness Meditation Improve Anxiety and Mood Symptoms? A Review of the Controlled Research." Canadian Journal of Psychiatry 52.4 (April 2007): 260-266.

Van Puymbroeck, Marieke, Laura L. Payne, and Hsieh Pei-Chun. "A Phase I Feasibility Study of Yoga on the Physical Health and Coping of Informal Caregivers." Evidence-based Complementary & Alternative Medicine (eCAM) 4.4 (2007): 519-529. Academic Search Premier. EBSCO.

Wojciechowski, Michele. "PT Practice Setting: Yoga." PT: Magazine of Physical

Therapy 16.4 (2008): 28-33. Academic Search Premier. EBSCO.

Woolery, Alison, Hector Myers, Beth Sternlieb, and Lonnie Zeltzer. "A yoga intervention for young adults with elevated symptoms of depression." *Alternative Therapies in Health & Medicine* 10.2 (2004): 60-63. Academic Search Premier. EBSCO.

Yoga Journal. "Yoga Journal Releases 2008 'Yoga in America' Market Study." (26 February 2008). http://www.yogajournal.com/advertise/press_releases/10.

Zoroya, Gregg. "Pentagon Researches Alternative Treatments." *USA Today* (10 November 2008).

Interviews

Anderson, Kylo. Yoga instructor and former Navy religious program specialist. Phone interview. (February, 2010).

Brown, Kim. Caledonia Correctional Institute prison unit program coordinator. Personal Interview. (October 21, 2010).

Burgwyn, Lori. Owner of Franklin Street Yoga Studio. Personal Interview. (February 18, 2010).

Callan, John. Yoga practitioner and former Marine. Personal interview. (February 15, 2010).

Callan, Diane. Organizer of yoga teacher training. Phone interview. (February, 2010).

Cole, Katy. Buddhist nun and spiritual program coordinator of Liberation Prison Project. Personal and email interview. (October, 2009).

Cunningham, Herb. Meditation instructor. Personal and email interview. (October - November, 2009).

Dimitrov, Dan. Former inmate and Human Kindness Foundation volunteer. Personal, phone and email interview. (October – March 2010).

Dowd, Patrick. Meditator and UNC-Chapel Hill student. Phone interview. (March 9, 2010).

Hickman, Daniel. Yoga Instructor. Personal Interview. (December 17, 2009).

Gaylord, Susan. Director of the program on integrative medicine at UNC-Chapel Hill. Personal Interview. (February 19, 2010).

Gilmartin, Robin. Director of PTSD-program in Newington, Conn. Phone interview. (February, 2010).

Krucoff, Carol. Yoga therapist at Duke Integrative Medicine. Phone interview. (February 22, 2010).

Libby, Dan. Postdoctoral associate at Yale University. Phone interview. (February, 2010).

Lozoff, Sita. Co-founder of Human Kindness Foundation. Personal interview. (September - October 2009).

Manafort, Suzanne. Yoga instructor. Phone interview. (February 4, 2010).

Matta, Alvaro. Yoga practitioner and co-founder of Semper Fit. Phone interview. (February, 2010).

Miller, Richard. Director of the Integrative Restoration Institute. Phone interview. (March 5, 2010).

Okerlin, Annie. Yoga instructor. Phone interview. (February 19, 2010).

Pérez, Teresa. Yoga instructor. Personal interview. (March, 2010).

Sacra, Elijah. Yoga instructor and co-founder of Semper Fit. Phone and email interview. (February, 2010).

Smith, Mary. Former inmate and prisoner support assistant of Liberation Prison Project. Personal interview. (October, 2010).

Steffens, Tom. Retired rear admiral and yoga practitioner. Phone interview. (March 2, 2010).

Stewart, Sandy Gentei. Abbott of the North Carolina Zen Center. Personal and email interview. (February – March, 2010).

Zipes, Paul. Founder of Yoga for Vets. Phone interview. (February, 2010).