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The effectiveness of a Zen strategy on the performance of female tennis players

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THE EFFECTIVENESS OF A ZEN STRATEGY ON THE PERFORMANCE OF
FEMALE TENNIS PLAYERS

A Thesis

Presented to

The Faculty of the Department of Kinesiology

San Jose State University

In Partial Fulfillment

of the Requirements of the Degree

Master of Arts

by

Suzan M. Jensen

December 2007

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ABSTRACT

THE EFFECTIVENESS OF A ZEN STRATEGY ON THE PERFORMANCE OF FEMALE TENNIS PLAYERS

by Suzan M. Jensen

Eastern philosophical principles such as Zen meditation, being centered, *letting go*, and staying *in the present*, are key elements of mental training programs used by sport psychology consultants, coaches, and athletes. Many authors have stated that the application of Zen concepts can help athletes attain greater mastery in sport. However, Zen as a sport psychology intervention has not been rigorously investigated. The purpose of this study was to qualitatively examine the experiences and perceived effectiveness of a Zen strategy to improve the performance of female tennis players. A pilot study with four volunteers was conducted. The female tennis players ($n = 8$) were NTRP rated 3.0 and 3.5. In-depth, semi-structured interviews were conducted in the 3rd and 6th weeks of the intervention. Through inductive analysis, raw data themes, higher order themes, and general categories emerged that were consistent with sport psychology theories about the application of Zen concepts in sport.

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Table of Contents

	Page
Abstract	iv
Acknowledgements	v
Chapter	
1. INTRODUCTION	1
Statement of the Problem	4
Statement of the Purpose	5
Definitions/Descriptions of Terms	5
Assumptions	6
Limitations	6
Delimitations	7
2. REVIEW OF LITERATURE	8
Eastern Philosophy of Sport Performance	8
The Application of Eastern Philosophical Principles to Sport	14
<i>Centering and Breathing</i>	18
Meditation	20
<i>Physiological Effects</i>	20
<i>Psychological Effects</i>	23
<i>Sport and Performance</i>	24
Tennis	26
<i>Cognitive Strategies</i>	26

	<i>Recreational Players</i>	28
	<i>Qualitative Research</i>	30
	Summary	31
3.	METHODS	32
	Research Design	32
	Participants	33
	Interviewer	35
	Procedures	35
	<i>Mental Practice</i>	37
	<i>Physical Practice</i>	37
	<i>Site</i>	38
	Instrumentation	38
	Pilot	39
	Data Collection Procedures	39
	Data Analysis	40
	Trustworthiness	41
	Summary	42
4.	RESULTS AND DISCUSSION	43
	Thematic Analysis	43
	<i>Mental State</i>	45
	<i>Mental Performance</i>	48
	<i>Technical Performance</i>	56

Participant Narratives	64
<i>Courageous</i>	65
<i>Diane</i>	66
<i>Flo</i>	66
<i>Rogette</i>	67
<i>Francis</i>	67
<i>Erin</i>	68
<i>Fortuna</i>	69
<i>Roberta</i>	70
Summary	71
5. CONCLUSIONS	72
Recommendations for Further Study	75
Areas for Future Research	77
Implications	77
References	78
Appendix A – Consent Form to Participate in Research	83
Appendix B – Interview Guide 1	84
Appendix C – Interview Guide 2	86
Appendix D – Zen Mental Training Guide	87
Appendix E – Zen Meditation Training Guide	102

Chapter 1

INTRODUCTION

Eastern philosophical principles such as Zen meditation, *being centered*, *letting go*, and staying *in the moment*, are key elements to the mental practice of many sport psychology consultants, coaches, and athletes throughout the West. Numerous consultants and coaches (Dahlkoetter, 2002; Gallwey, 1997; Huang & Lynch, 1992; Jackson, 1995; Lynch, 2001; Lynch & Huang, 1998; Orlick, 2000; Sandberg & Green, 2000, 2001) have suggested that by practicing Eastern philosophical concepts and learning to *quiet the mind*, athletes may attain new levels of mastery in the relationship between mind and body, and optimize their athletic potential. For example, Green (2000) described eight key Zen concepts, such as *mushin* (empty mind), and *ki* (energy), and how they can be applied to improve sport performance. Orlick wrote about the importance of the Zen qualities of *oneness* and *empty mind* in the pursuit of personal excellence. Despite a continued interest in the Eastern approach to sport, Zen, as a sport psychology intervention, has not been rigorously investigated.

Authors who advocate the application of Eastern principles to sport write that athletes achieve their greatest potential by developing awareness, quieting the mind, and staying in the present (Orlick 2000; Parent, 2002). When athletes experience peak performance they report feelings of oneness, complete absorption, and a sense that action and awareness merge (Orlick, 2000). Because there are similarities between a state of awareness that is developed through Zen and peak performance and flow, there is a potential application in sport psychology for a Zen strategy. The Zen strategy used in this

investigation taught participants to use Zen meditation and incorporate Zen principles into their sport training.

There are various Zen styles throughout the world, and each style has its own form of meditation. The meditation that was used in this study is a passive type (Dahlkoetter, 2001) called *zazen*, or seated meditation. Unlike a relaxation style of meditation, *zazen* is a formal, disciplined practice (S. Suzuki, 2002) in which correct posture and breathing are important. While the idea of Zen meditation is not to become uncomfortable, some discomfort is considered normal at first, and should be acknowledged, then let go. It is important in Zen to slow down the mental chatter. To this end, participants were advised to count silently to 10, coinciding with their breathing, and then begin again. Concentration meditation, such as Transcendental Meditation, focuses on an object or mantra, a repeated word (Dahlkoetter, 2002). However in *zazen*, counting is not used as a mantra, it is a tool to help reduce the mental chatter until one can do so without counting. In this investigation, practicing Zen meditation regularly was used as a means to quiet the mind and experience synchronization between mind and body. Philosophical concepts that embody Zen were taught to the participants along with *zazen*. These concepts are: letting go, *mushin*, *effortless effort*, *egoless attitude*, oneness, attention to breathing, centering, and *ma* (temporal and spatial awareness).

Zen meditation has its roots in Buddhism, which was established in India about twenty-five hundred years ago, with meditation (*dhyana*) as its vehicle to spiritual enlightenment. Buddhism was introduced in the 6th century to China, by the Indian monk, Bodhidharma, as a spiritual practice informed by a rich philosophy. In China, the

deep Indian philosophical traditions merged with the pragmatism of Taoism (Austin, 1998). Over several hundred years Chinese monks transformed dhyana into what they called Ch'an, a practice of realizing an awakened awareness in everyday life (D. T. Suzuki, 1980). Thus transmogrified, Ch'an made its way to Japan. Zen, the term given in Japan, was woven into nearly every aspect of the Japanese culture. Practitioners, from the art of the Japanese Tea Ceremony to samurai warriors, embraced Zen for its quality of calmness in activity and activity amidst calmness, in which they learned to attain the highest level of awareness by remaining in the present. The warrior, for example, was trained to quiet his mind and become aware of his true nature in preparation to face deadly adversaries (D. T. Suzuki, 1980).

In the past three decades, numerous authors have contributed to the popular literature about adapting Zen philosophical concepts to sport performance (Gallwey, 1997; Jackson, 1995; Leonard, 1975; Millman, 1979, 1999; Orlick, 2000; Parent, 2002; Spang, 1998). These authors often refer to the classic, *Zen in the art of archery* (Herrigel, 1981) about subjects such as the metaphor of the arrow shooting itself, or playing the sport with "no thought." Gallwey, a pioneer in the application of Zen concepts to sports such as tennis and skiing, wrote, "The ball seems to get hit through a process which doesn't require thought. There may be an awareness of the sight, sound and feel of the ball, and even of the tactical situation, but the player just seems to know without thinking what to do" (p.17). In *The ultimate athlete* (1977), Leonard described the transference of harmony from Eastern to Western thought about sport. Still others recommend exercises to help athletes empty the mind, and increase harmony and balance in their sport and

daily lives (Huang & Lynch, 1992; Orlick, 2000). These authors demonstrate a lasting interest in the Eastern ways of sport psychology. Despite the fact that prominent writers in the field have presented Eastern concepts as viable sport psychology strategies, applied sport psychology scholars have not rigorously investigated the effectiveness of Eastern philosophical practices such as Zen in sport performance. Research into the use of a Zen strategy on sport performance is possible by clearly defining a Zen strategy, creating a protocol to implement it, and exploring the experiences of athletes who learn and operationalize Zen in a competitive setting.

Statement of the Problem

There is a lack of scholarly research about Zen in sport performance. To date, only one sport psychology study has investigated Zen as a mental skill (Masciana, Van Raalte, Brewer, Branton, & Coughlin, 2001). Although several investigations have addressed centering and focused breathing (in combination with self-talk or meditation) in sport performance (Nicholls, Holt & Polman, 2005; Rogerson & Hrycaiko, 2002; Savoy, 1993, 1997), relatively little emphasis was placed on these practices. The gap in scholarly literature related to Zen principles in sport performance may be due, in part, to the difficulty of describing, defining, and systematically operationalizing Zen. However, even with Zen's quality of ineffability, it is possible to define and examine a Zen strategy comprised of Zen meditation and key Zen concepts relevant to sport performance. Imperative to any research about Zen and sport performance is an operational definition of Zen as applied to sport, which is something not done in the study by Masciana et al.

This study has extended the knowledge about Zen in sport beyond what is currently available in the literature by defining and operationalizing Zen in a sport context.

Statement of the Purpose

The purpose of this study was to qualitatively investigate the perceived effectiveness of a Zen mental skills strategy on the performance of female tennis players in a competitive setting. A second purpose was to learn about the experiences of athletes who incorporated Zen into their training.

Definitions/Descriptions of Terms

1. Zazen

Sitting meditation, focusing on one's breath and practicing "a quiet awareness, without comment, of whatever happens to be here and now" (Watts, 1957, p. 155).

2. Zen

Seeing reality directly (Watts, 1957, p. 155).

3. Zen strategy

A mental skills protocol developed by the researcher, consisting of zazen (sitting meditation) and eight Zen principles:

- Attention to breathing: slow, easy breathing with emphasis on the out-breath, focusing on the belly, bringing about "a still, bright clarity" (Watts, 1957, p. 156).
- Centering: shifting attention to the abdomen, so that the body has a sense of firmness and being connected to the ground (Watts, 1957, p. 156).
- Effortless effort: not trying to make something happen (S. Suzuki, 2002).

- Egoless attitude: merging of the subject and experience through ego consciousness (Watts, 1957, p. 120).

- Empty mind: experiencing without preconceived ideas (S. Suzuki, 2002).

- Oneness: “becoming one with and inseparable from the essence of what you are doing during each moment you are actually doing it” (Orlick, 2000, p. 155).

- Letting go: allowing thoughts to come and go without holding on to them (S. Suzuki, 2002, p. 109).

- Ma: a pause or a split second of time; a window of time, as in between points (Sandberg & Green, 2000, p. 12).

Assumptions

1. Participants would be willing to learn the Zen strategy.
2. Participants would be able, with instruction, to meditate for 15 minutes.
3. Participants would continue to routinely practice and play competitively.

Limitations

1. Participants might not have benefited equally from the Zen strategy due to individual personalities and needs.
2. There was no way to control an individual's effort.
3. Despite an effort by the researcher to select athletes of comparable ability, the participants might not have been compatible in ability, which could have affected their perceptions and experiences.

Delimitations

This study was delimited to tennis players who were:

1. Female.
2. 18 years or older.
3. Not currently practicing Zen meditation, and have not done so in the past year.
4. Rated 3.0 and 3.5 NTRP. Ratings are based on a player's self-rated ability to perform specific skills with specific proficiency, and on winning or losing matches.
5. Practicing twice weekly and competing consistently throughout the season.

Chapter 2

REVIEW OF LITERATURE

The following literature review presents a scholarly perspective on the Eastern philosophy of sport performance, the application of Eastern principles to sport, meditation, and the application of mental skills in a tennis setting.

Eastern Philosophy of Sport Performance

This section reviews Eastern philosophy in the context of sport psychology. In the current investigation, Eastern philosophy refers to concepts originating thousands of years ago from India, China, and Japan, which are now being used to develop mastery in sport performance. Sport psychology consultants and coaches use Eastern philosophical principles such as quieting the mind and being in the moment to help athletes progress toward *inner mastery*, and maximize their human and athletic potential (Wertz, 1977). Zen, often used in the martial arts, seems to cultivate qualities that promote greater concentration, the ability to read opponent's intention and movement, communicate with teammates, and turn negative events around (Jackson, 1995).

The following review of literature presents an academic perspective of Eastern principles, including various types of meditation, used in sport. This review contributes to our greater understanding of operationalizing Eastern philosophical concepts – such as having a non-judgmental attitude, oneness, centering the mind and body, and elevating awareness – and how these concepts contribute to meeting the mental, emotional, and physical demands of sport.

Wertz (1977) discussed the Eastern philosophical perspective of athletic participation and competition. He stated that Hatha Yoga and Zen provide a means of reaching a higher consciousness level and improving sport performance through methods and practices outlined in his article. Wertz defined *satori* as an inner state of awareness and self-mastery normally reached in a Zen student's mature phase of practice. He compared *satori* to "the exalted condition of a great athlete" (p.70).

Moreover, the (1977) article explained how Yoga and Zen concepts could positively influence sport performance. According to Wertz, athletes come to know themselves through sport. Athletes' mastery of the self, and ultimately sport performance, can be more deeply experienced by practicing the following key concepts: 1) Meditation, taken up by professional as well as amateur athletes (Wertz, 1977), promotes clear thinking. 2) Yoga and Zen breathing exercises promote inner calm and the ability to respond with less ego involvement, while facilitating outer awareness. It is this outer awareness that enables the athlete to respond to immediate challenges posed in competition. 3) Effortless effort, or not trying too hard, keeps the athlete in a mental zone in which the performance takes over. 4) Staying in the present. Anger, frustration, or even self-congratulatory thoughts about something that happened, may cause the athlete to lose focus. Similarly, thinking too far forward may weaken performance (Wertz, 1977).

Practicing Eastern methods of mind-body control in Western sport requires coming to terms with differences in attitudes about competition and winning (Wertz, 1977). He noted that in the West, sport is highly structured and controlled by rules, and

is often characterized by aggressive play. Athletes endeavoring to use Eastern techniques to enhance their performance must channel their effort not against the other but toward themselves. The author argued that while the objective of the game can still be to win, the reason for doing sport must be examined. Sport can be done to improve skills and to realize one's ultimate potential. Wertz wrote that Eastern techniques may help an athlete develop trust between the body and the brain, which in turn facilitates the extraordinary sense of moving effortlessly. It is of value to consider the extraordinary sport experience so that we may understand more about how we think and talk about sport (Wertz, 1977). Therefore, he proposed that we ask ourselves whether it is important to gain self-knowledge through sport. Wertz expressed his belief that inner changes such as self-mastery, occurring through Eastern practices, are an important goal of sport performance, stating that athletes create their potential from "raw material," in their journey toward self-mastery.

In a review of workshops given to enhance the mind-body connection in sport, Bate (1982a) supported the use of Eastern concepts, including those found in Zen practice, to optimize the human potential in physical education and sport performance. The workshops were designed to develop awareness, reduce interfering thoughts, practice effortless movement, pay attention to breathing, and view oneself without judgment. The author recommended that colleges, universities and sporting bodies incorporate these concepts into their programs toward the development of human potential.

A second paper by Bate (1982b) described his belief that awareness and self-knowledge are fundamental to improvement in movement, and thus bring about

development of the whole person. He described an “Enlightenment Intensive” workshop that included various contemplation-awareness exercises designed to increase one’s self-knowledge, based on Zen and Taoist concepts.

Subsequently, Bate (1982c) supported the view that attaining transcendence through sport contributes to the whole person, citing prominent authors in the field of optimizing human potential (Csikszentmihalyi, 1975; Gallwey, 1997; Leonard, 1975; Maslow, 1970, 1971; Murphy, 1972; Shapiro, 1978). In his article, Bate focused on Eastern practices to support the transformative process. Several decades later, athletes, coaches and consultants would begin to employ Zen and Taoist principles with the goal of self-mastery and improving performance.

In an article addressing Zen and sport, Abe (1986) described the traditional Japanese way of thinking and its relationship to modern sport. He discussed the cultural history that gave rise to the Japanese martial arts and sport. Abe identified how Zen is meaningful in sport and concluded by emphasizing the value of Zen in a sport context.

Zen emerged in Japan, and was influential in the development of martial arts at the time of the samurai warriors (Abe, 1986). The warriors had to be willing to die for their lord, and thus the ability to still the mind in the face of combat was imperative to the lord, who sought a favorable conclusion to his war campaigns. Further, the swordsmen could not be self-congratulatory following every “kill,” lest they risk additional peril.

The modern martial arts draw from this historical perspective, referring to mental process that enables the “warrior” in the struggle toward self-development (Abe, 1986). As a swordsman in Kendo, Abe acknowledged that he was temporarily satisfied when he

won, but recognized that he must continue to struggle with his own faults in technique; through continued practice he found joy in mastering the techniques. In the article, Abe explained that the act of mastering technique while keeping nothing in the mind is a means to self-transcendence. He said, “detachment from ego, its desires and delusions, is a noble way of life for humankind, whether achieved through Zen, Kendo, or sports” (p. 48), establishing that Zen is useful not only in the martial arts but also in sport. He emphasized that the process of developing one’s nature is more important than winning. In this way, Abe concluded, sport has the potential to advance humanity.

Ravizza (2002), like Abe (1986), discussed a philosophical framework for sport performance based on consideration of the athlete as a whole person with the potential for personal development through sport. Drawing from existential and educational principles, he noted that there is value in respecting the experiential wisdom of the athlete. In sport, both Zen and existentialism focus on the experience as a way to develop awareness and stay in the present during a performance. Ravizza emphasized that mastery of sport requires the athlete to be fully present. In his article, Ravizza rejected trying to win as the primary goal, and emphasized that self-development and leading the athlete towards a process orientation may benefit performance more than psychological skills such as imagery, goal setting and relaxation.

Zen is fundamental in Ravizza’s (2002) approach to sport performance consulting. In the article, he stressed that breathing is essential to link the mind and body. According to Ravizza, attending to the connection between mind, body, and performance helps the athlete to “let go” of control, allowing the performance to unfold

effortlessly, rather than being forced. Athletes often state that their great performances felt effortless (Ravizza, 2002). Ravizza emphasized that practicing with a Zen-mind helps athletes to transcend the ego, stay in the moment, and experience relaxed concentration, without trying too hard.

Moore and Stevenson (1991) defined trust as a mental skill that allows competitors to let go of conscious control and to perform skills automatically during performance. They stated that during skill acquisition in sport, conscious effort is necessary to refine skills, but it gets in the way of a competitive athlete. They suggested having a non-judgmental attitude during the execution of a skill for optimal performance. Letting go and a non-judgmental attitude in sport are important concepts in Zen.

To help athletes develop trust in their performance, Moore and Stevenson (1994) created a three-phase program consisting of education, skills acquisition, and competition simulation. The authors emphasized the importance of letting go of conscious control and performing skills automatically during sport performance. They also stressed the importance of a quiet mind, staying in the present, and not trying too hard. A quote from a Zen master summarizes what the authors conveyed in their approach, “You yourself make the waves in your mind. If you leave your mind as it is, it will be calm. This mind is called big mind” (S. Suzuki, 2002, p.35). The notion of clearing one’s mind of distracting thoughts has been expressed throughout Zen literature and is something from which sport performance consultants, such as Gallwey (1974), Lynch (2001), and Orlick (2000), have drawn from extensively. In their program, Moore and Stevenson asked athletes to monitor their conscious thoughts during sport events. This is akin to Zen

teachings, in which students learn to become aware of having thoughts, and then let them go (S. Suzuki, 2002).

The Application of Eastern Philosophical Principles to Sport

In this section of the literature review, scholarly articles and research pertaining to the application of Zen principles to sport will be examined.

In a paper presented to the Association for the Advancement of Applied Sport Psychology, Green and Sandberg (2001) made recommendations to coaches based on Zen principles. They stressed the importance of knowing athletes in terms of the mind, body, and spirit. The authors specified several things that coaches can do, using an Eastern approach, to prepare themselves to be effective coaches, including letting go, centering awareness, and focusing on the athletes' energy level.

Sandberg and Green (2000) discussed the application of an Eastern philosophy for collegiate athletics, drawing parallels between a Zen-based philosophical framework and flow (Jackson & Csikszentmihalyi, 1999), peak performance, and the martial arts. The authors defined eight Zen concepts, described the application of Zen to athletic situations, and provided a set of mind-body exercises designed to develop skills such as awareness, concentration, centering, use of breathing, and humility. The presentation created a link between Zen and sport, and included enough complexity to provide those already familiar with Eastern strategies with specific tools for improving sport performance. Sandberg and Green also noted that Zen, used by martial artists for centuries to develop presence and awareness, has some similarities to Western sport psychology strategies. For

example, both Zen and Western sport psychology recommend ‘focus on breathing’ to minimize distracting thoughts.

Sandberg and Green (2000) explained eight Zen principles that, when applied as mental strategies in sport, may profoundly advance the development of the whole athlete. These included: 1) satori: the athlete is aware of a transcendent performance taking place, 2) letting go: the athlete allows extraneous thoughts to drift away and allows the performance to unfold fluidly, 3) being centered: mental and physical balance, knowing one’s center of power, 4) investing in loss: mistakes can be viewed as gifts that teach us blending humility with confidence, 5) mushin: state of oneness, 6) ma: physical space, a segment of time, a pause in action, 7) ki: energy force, drawn from one’s mental and physical center and, 8) samahdi: meditation in motion.

Each description of a Zen principle was followed by several possible applications of that principle in sport. For example, Sandberg and Green (2000) emphasized the importance of being centered, such as when a baseball player releases the ball; the authors explained that an athlete can use breathing to focus the mind on the body’s center below the navel and encouraged the use of centering in pre-performance routines. The applications touched on a wide range of sports, from tennis to equestrian performance, and showed benefits of Eastern principles in team and individual situations.

Widely accepted mental strategies, such as cognitive restructuring, imagery, progressive relaxation and team building were incorporated into the Zen training exercises. For example, in an exercise for ma (using time or space), Sandberg and Green (2000) suggested using visualization to replay several points, imagining the use of

focused breathing from one point to the next. The authors' blend of Eastern and Western mental strategies positioned Zen with traditional mental strategies more familiar to coaches and athletes.

In a poster presentation, Sandberg and Green (2001) continued to synthesize Eastern and Western mental strategies, and introduced a method of teaching mindfulness (being in tune with what is really happening) in the context of attentional focus. They stated that practicing mindfulness teaches the athlete to shift easily between different types of focus. The Zen principles were categorized into four types of attentional focus based on Nideffer's schematic (1981), as cited by Sandberg and Green: broad-internal, broad-external, narrow-internal, and narrow-external. As an example, *mushin* (state of oneness) was placed into the broad-internal category because it exemplifies the complete inner awareness that an athlete experiences when there is no feeling of separation between mind and body. Sandberg and Green emphasized that paying more attention to the experience than to outcome goals will increase the likelihood of peak performance.

A study was conducted to evaluate the efficacy of five separate mental strategies for improving performance in dart throwing (Masciana et al., 2001). These mental strategies included: positive self-talk, imagery, physical instruction drilling, a Zen-based strategy, and the participants' own (control) strategy. In this study, the authors noted that sport psychologist consultants often combine mental strategies into packages, making it difficult to know which psychological skills contribute to performance; they cited research by Greenspan and Feltz (1989), which recommended evaluating components of psychological skills separately.

Participants in the (Masciana et al., 2001) study included 30 undergraduate and graduate students (15 females and 15 males), between 20 and 38 years. A regulation, 18" dartboard and brass darts were used in the study. To instruct the participants how to use the psychological skills, the researchers prepared a one-paragraph description of each mental strategy. On the first of six meetings, the participants were randomly assigned to one of the mental strategies. They were asked to read through and practice the mental skill before the next session, two days later. At each session, the participants threw 12 practice darts and 30 experimental darts. They were reminded to use their strategy following the 12th and 24th darts.

After the participants completed five sessions, using each of the strategies once, a manipulation check was done. The researchers (2001) conducted a statistical analysis that included a one-way MANCOVA to compare sequential sessions to account for improvement over time. The analysis revealed that positive self-talk, imagery, and participants' own strategy resulted in the best performance, followed by Zen-based strategy, and finally, physical instruction-drilling (Masciana et al., 2001). This lends support to findings by Weinberg and Jackson (1990) that tennis coaches prefer self-talk out of 13 different psychological strategies for improving performance. Despite the findings of Masciana et al., the participants were not well trained in any of the psychological studies under investigation, and therefore the results may not be meaningful.

Masciana et al. (2001) noted that based on post experimental interviews, concentration seemed to be a problem for some of the participants when using imagery

and the Zen-based strategy. This is indeed noteworthy because Zen and Eastern strategies are used to heighten awareness and the ability to concentrate (Lynch and Huang, 1998; Orlick, 2000; Sandberg and Green, 2000). In their discussion, the researchers indicated that Zen was not adequately taught to the participants. Although it is notable that a Zen strategy was included in the investigation, the study fell short by not providing enough time for the participants to learn about, practice, and absorb the mental strategies in question. According to the (2001) study, one participant talked about problems using the Zen technique, “I found [it] very difficult to keep my mind completely blank. If I have to throw the dart to the center, and I know that’s the task, for me it’s very difficult not to concentrate on that” (p.35). A common effect of practicing Zen is the reduction of interfering thoughts, without stopping all thoughts. Therefore, the participants might have been inadequately educated in the Zen-based strategy.

Not fully understanding the Zen technique likely contributed to its lack of effectiveness, according to Masciana et al. (2001). Self-talk, compared to Zen techniques, may be more easily explained and more quickly learned. In Lerner et al.’s (1996) investigation of imagery and goal setting in free-throw shooting, for example, the authors stated that not having enough time to learn the [imagery] technique may have reduced the effectiveness of imagery. Like imagery, Zen techniques take more time to integrate into an athlete’s skill set.

Centering and Breathing

Centering, breathing techniques, and meditation are three of the eight components of the Zen strategy presented in this investigation. The following portion of the literature

review summarizes the research that includes centering, breathing and meditation as elements of mental skills packages designed to improve attentional focus and control arousal.

Centering and meditation were part of a mental skills program to improve attentional focus and the performance of a college football team (Fenker and Lambiotte, 1987). Two program goals were to foster present-focused behaviors, and increase attentional control through the use of centering. Breathing techniques were taught as an aid to help the football players become centered. Centering was actively used during football games, especially in huddles. A questionnaire revealed positive feedback from the players about the program, including feelings of increased team unity.

A mental skills training program for a NCAA Division I female basketball player included centering as a relaxation technique (Savoy, 1993). However, the study did not elaborate on how or when centering was employed. The player indicated that the intervention improved her game performance and confidence. Game statistics indicated that her skills improved over the previous year, although no baseline tests were done for this study.

Terry, Coakley, and Karageorghis (1995) studied the effect of intervention strategies, including centering, on elite junior tennis players. The participants were placed in one of four intervention groups: a cognitive group which did a 15-minute visualization; a somatic group, which practiced centering for 10 minutes; a cognitive and somatic group, practicing for 25 minutes; and a control group, which did a concentration exercise. There was a significant reduction in somatic and cognitive anxiety, and an

increase in self-confidence in all four of the test groups, however, it was noted that the findings might not be generalizable to older populations.

Patrick and Hrycaiko (1998) used centering as one aspect of relaxation training in their study of endurance athletes. There were no specific results reported about centering, although the researchers found that their mental skills package was effective in improving the running time of three male triathletes and one elite runner.

In an investigation of mental skills, Rogerson and Hrycaiko (2002) taught centering and self-talk to five male junior ice hockey goaltenders, using inhale and exhale exercises combined with three types of self-talk phrases: focus, self-affirming, and mood. The mental skills were effective in improving the save percentage of the goaltenders in competitive situations.

In a qualitative study, Nicholls, Holt, and Polman (2005) found that breathing exercises were among the techniques that resulted in effective coping in 18 male golfers, ages 14 to 21. Using semi-structured, in-depth interviews, the researchers sought to gather data on the experiences of youth golfers.

Meditation

This section describes the research conducted on the physiological and psychological effects of meditation, in general and sport related situations.

Physiological Effects

There are many types of meditation, however researchers in these studies primarily focused on transcendental meditation (later known as the Relaxation Response), because it was widely known and easy to teach. This type of meditation, a

form of free flowing attention to a sound or word, was reported to elevate the mind to a more creative level (Benson, 1972). Researchers began to study the physiological effects of the Relaxation Response and various other types of meditation, and the effect of meditation on sport (Benson, 1976; Cauthen & Prymak, 1977; Elson, Hauri & Cunis, 1977; Malec & Sipprelle, 1977; Wallace & Benson, 1972). Athletes and coaches began to focus on meditation as a mental skill for relaxation in the 1970's.

The cornerstone in meditation research was conducted by Wallace and Benson (1972), who investigated the effect of transcendental meditation on heart rate, blood pressure, blood lactate, body temperature and skin resistance. They stated that previous meditation research relied on data produced from a wide variety of yoga meditation techniques; therefore, Wallace and Benson chose transcendental meditation for their investigation because it was widely known and had a standardized method. According to Benson (1972), meditation requires four things: a peaceful environment; repetition of a word or phrase; a non-judgmental attitude; and a comfortable position. Benson noted that early Buddhist and Yogic practitioners most likely encouraged sitting to keep people from falling asleep. Although they found that Zen meditation was standardized (practiced in exactly the same way among various groups), it was not well known at that time. The participants were 36 college students (28 males, 8 females), and most had 2 to 3 years of experience meditating. They were connected to equipment that measured blood pressure, heart rate, temperature, and skin resistance, and a catheter allowed the researchers to measure blood lactate levels. Blood pressure, heart rate, and metabolism were significantly reduced during meditation, as were blood lactate concentrations. The

participants' skin resistance increased during meditation, which the authors believed was a result of meditation-induced, lowered norepinephrine. Similarly, Wallace and Benson attributed low lactate concentrations to the lack of blood vessel constriction, resulting in increased blood flow to skeletal muscles.

In a study to compare physiological changes in participants with different levels of meditation experience, Cauthen and Prymak (1977) monitored respiration rate, skin conductance, skin temperature and heart rate in five groups, before, during and after meditation. The data were analyzed in a 5 x 8 repeated measures analysis of variance design, with a .05 significance level. Three groups of participants did meditation during the study, and were either "experienced" (average = 5 years), intermediate (average = 14 months), or "novice" (average = 7 days). The fourth group did a pseudo-meditation (thinking about a word given to them), and the fifth group practiced relaxation for 5 days prior to testing. Between groups analysis showed that there were no significant differences in physiological arousal levels. The authors concluded that greater experience in transcendental meditation did not result in a greater reduction of arousal.

Malec and Sippelle (1977) investigated the effect of Zen meditation and demand characteristics on male undergraduate students. Three groups of meditators were shown an instruction video, with three different outcome expectations: relaxation outcome, no outcome, and arousal outcome. A fourth group served as the control. During meditation, all of the meditation groups experienced decreased respiration rate and reduced muscle tension, despite the demand situation. The meditating groups had an increase in heart

rate in the first 10 minutes, followed by a decrease during meditation. There were no significant changes in galvanic skin response among any of the mediators.

These studies on physiological changes that occur during meditation provided the foundation for continued research on the effects of meditation. Researchers generally agreed that meditation could reduce blood pressure, heart rate, and muscle tension (Benson, 1972; Malec & Sipprelle, 1977). Although there were some differences in the outcome of galvanic skin testing, most participants, whether experienced or not, experienced physiological changes that had important implications in health. Later, researchers would explore the psychological effects of meditation, and the possibility of benefits to competitive athletes.

Psychological Effects

Benson (1976) discussed meditation as a relaxation tool to minimize the effects of overstress, which occurs in “fight or flight” situations. He explained that while biofeedback was useful to target one physical response at a time (e.g., lowering heart rate or lowering blood pressure), various studies of Yogis and Zen monks showed that heart rate, breathing, blood pressure and metabolism could be decreased at the same time through meditation. He called this meditation process the Relaxation Response. A study of Yoga meditation by Elson, Hauri, and Cunis (1977) found that meditators remained more alert than did the controls. Brain waves, heart rate, respiration, basal skin response, and temperature of 11 meditators were compared to 11 non-meditators. The meditation group maintained a steady level of alpha-theta brain waves, experienced a decrease in

respiration and had an increase in basal skin resistance when compared to the non-meditators.

To understand the psychological and physiological effects of the Relaxation Response, biofeedback, and transcendental meditation on performance, Zaichkowsky and Kamen (1978) investigated muscle tension and locus of control in 41 male and female university students. Participants were randomly assigned to a Relaxation Response, biofeedback, or control group. A fourth group that consisted of experienced transcendental meditators was included in the investigation. Participants meditated twice per day, or did biofeedback twice per week, for 12 weeks. Results of pre- and post-tests revealed that frontalis muscle tension was significantly reduced in all groups, while changes toward an internal locus of control were observed only in the biofeedback group.

Sport and Performance

Griffiths, Steel, Vaccaro, and Karpman (1981) investigated the effectiveness of meditation and biofeedback relaxation in 50 male and female beginning scuba divers, in an effort to explore whether relaxation techniques reduce anxiety and improve performance. The participants were randomly placed in three groups: biofeedback relaxation ($n = 19$), meditation ($n = 14$), and a control group ($n = 17$). There were no significant correlations between learning to relax and improvement in completing the underwater task. Griffiths et al. explained that the lack of correlation could have been due to low levels of state and trait anxiety in the participants, as well as having to complete a task that lacked sufficient complexity.

The relationship between meditation and muscle tension was studied by Harris and Robinson (1986), who found that concentration meditation techniques used in Karate significantly reduced tonic muscle tension from pre-test to post-test in 36 beginning and advanced karate students.

Hall and Hardy (1991) compared the effectiveness of meditation and visuomotor behavior rehearsal (VMBR) on marksmanship performance. Fifteen male and 15 female university students enrolled in a beginning pistol marksmanship course were randomly placed in one of three groups: meditation, VMBR, or a control. The participants in the two treatment groups practiced either transcendental meditation or VMBR with a qualified instructor and on their own. All three groups learned to shoot with an expert instructor. The data were analyzed using a 3 x 2 randomized design. Univariate procedures were used for the dependent variables: slow, timed, rapid, and composite. Hall and Hardy stated that only VMBR resulted in significant improvements in performance. However, the data for rapid-fire performance seems to contradict that conclusion because in that category transcendental meditation students improved nearly identically to VMBR students.

Two mental training interventions were studied by Couture, Singh, and Lee (1994) in an effort to learn whether associative or dissociative strategies lead to a reduction in heart rate and a perception of less exertion and decreased fatigue during military endurance tasks. Forty male infantry soldiers were taught to either meditate, do biofeedback, or both, for 10 one-hour sessions, over 10 days. A control group did other training exercises. Between trials 1 and 2, the intervention groups perceived increased

fatigue, but had decreased heart rates, and demonstrated an improved ability to report the remaining time in the march.

Solberg, Ingjer, Holen, Sundgot-Borgen, Nilsson, and Holme (2000) studied the effect of meditation and autogenic training on stress reactivity and recovery in 31 male runners. The authors found that post-exercise blood lactate levels were significantly reduced in the meditation group when compared to blood lactate in the control group, while the autogenic training group showed no significant difference compared to the control group. There were no significant differences in heart rate or oxygen consumption between the relaxation group and the control group. The authors concluded that the lactate response may be reduced by meditation.

Tennis

To provide some perspective on mental strategies that have been studied in tennis, the following is a review of the literature pertaining to cognitive strategies and qualitative research in tennis performance.

Cognitive Strategies

Imagery, attentional focus, relaxation, positive self-talk, and goal setting are cognitive strategies that have received much attention in sport psychology research of tennis players. The studies below examine intervention strategies used in tennis. They are useful in this investigation as examples of previous research on the application of interventions to improve tennis performance.

Weinberg, Gould, Jackson, and Barnes (1980) investigated imagery, positive self-efficacy statements, and attentional focus in 20 female and 20 male tennis players of high

and low abilities. The (1980) authors concluded that the cognitive strategies under investigation did not improve tennis serves. They acknowledged that the participants were not given time to learn the cognitive strategies, which may have had an effect on the outcome.

Davis (1991) developed an individual imagery and goal-setting program to enhance performance for a female collegiate tennis player. Imagery sessions were used to help the athlete maintain concentration, to stop irrelevant thoughts, and as a post-match review to help her recall what she was thinking about when her game was not going well. Davis (1991) found, through observation and interviews that focus on performance goals also contributed to improved concentration during tennis matches.

In a Masters thesis, Choboy (1994) studied the effect of imagery on the tennis service of 37 intermediate, recreational players, using a pretest/posttest design, with a 2-week (eight-session) training period. No significant differences between the strategies emerged; each of the four groups improved slightly, with the exception of the imagery/physical practice group, which did worse. The most improvement was seen in the physical practice group.

In a study of psychological skills training for tennis (PSTT), Daw and Burton (1994), revealed positive results for the PSTT program, in which 6 female and 6 male collegiate tennis players were trained in goal setting and imagery. Group and individual educational sessions were conducted throughout the fall season, and the athletes practiced using the strategies during 12 on-court practices. There were some problems with the coaches allowing enough psychological skills training time; therefore, the researchers

(1994) changed the PSTT team practice sessions to individual meetings, so that the mental strategy sessions would not interfere with team practice. The resulting individualization of PSTT led to positive outcomes, according to the case studies. Participants' early season and late season matches were rated to discern changes in skill using software designed to compute game statistics. Statistical comparisons were made within the team, and with another collegiate team in the same league not participating in a PSTT program.

Five Division I female tennis players between 18 and 21 years were taught to use self-talk as a strategy to positively shift attentional focus during volleys. Using a single-case multi-baseline design, Landin and Hebert (1999) conducted a mixed methods study, in which they created a self-talk intervention strategy to use with the split step and shoulder turn movements. The participants were instructed to verbalize, "split" after hitting the ball and moving toward the net, and to say, "split" once again at the moment the ball was hit back toward them. The participants were asked to say, "turn" as they began their back swing, as a cue for them to turn their shoulders prior to striking the ball. Independent coders documented movement patterns and accuracy of volleys. The investigation supported the use of self-talk and showed that four of the five participants improved from their base-line scores. In follow-up interviews, the participants expressed increased self-confidence and greater attentional focus.

Recreational Players

Extending research about mental strategies used by recreational athletes, Ryska (1998) studied the use and perceived effectiveness of cognitive strategies, and the

relationship between cognitive strategies and anxiety, in league tennis players. The participants were 88 male and 98 female adult tennis players who were placed in groups of like ability, according to their National Tennis Rating Program (NTRP) level. Participants' ages ranged from 20 to 60 years, with a mean age of 41. Based on data collected from a questionnaire, the author (1998) found that the participants ranked relaxation/imagery as the most effective mental strategy, followed by attentional control, positive self-talk, and goal setting. The participants reported actually using attentional control most frequently, then positive self-talk, imagery/relaxation, and goal setting. The investigation revealed that attentional focus and goal setting were associated with a reduction in cognitive anxiety, while attentional control, imagery and relaxation were associated with reduced somatic anxiety, and attentional control and positive self-talk increased self-confidence. Ryska (1998) noted that these findings were similar to findings in studies about elite athletes in various sports. The author concluded by suggesting that qualitative research would reveal a greater depth of understanding about recreational athletes' use of cognitive strategies.

Self-efficacy and tennis performance in recreational players were investigated by Barling and Abel (1983). Participants ($n = 40$) were active tennis players who played an average of 3.53 times per week and had a mean age of 26.6 years. They were asked to rate themselves using a scale designed by the National Tennis Rating Program (NTRP) to assess tennis playing skill level, and to complete a self-efficacy questionnaire by Kendall and Korgeski (1979). Two raters also evaluated the players' skill individually. The

authors (1983) found a consistent relationship between self-efficacy responses and tennis performance – the better players had a higher level of self-efficacy.

Theodorakis (1996) tested the tennis serve accuracy of participants in a university physical education class to evaluate goal setting, commitment, self-efficacy and self-satisfaction in a sport specific setting. They found that goal setting, self-efficacy and personal goal setting were determinants in performance, and that self-satisfaction was a determinant of personal goal setting.

Qualitative Research

A Psychological Skills Training for Tennis program was examined by Daw and Burton (1994) using questionnaires, athletes' logs, and researchers' logs to evaluate the effectiveness of the program.

Terry, Coakley, and Karageorghis (1995) studied the effect of intervention strategies on elite junior tennis players to test the matching hypothesis theory. The participants were placed in one of four intervention groups: a cognitive group which did a 15-minute visualization; a somatic group, which practiced centering for 10 minutes; a cognitive and somatic group, practicing for 25 minutes; and a control group, which did a concentration exercise. The short length of time used for the interventions was purposeful, in an effort to learn whether a minimal investment in time might yield significant reduction in anxiety. There was a significant reduction in somatic and cognitive anxiety, and an increase in self-confidence, in all four of the test groups, supporting the use of short interventions for junior tennis players. However, it was noted

that the findings may not be generalizable to older populations. The results did not support the matching hypothesis theory.

In a qualitative analysis of burnout in elite junior tennis players, Gould, Tuffey, Udry and Loehr (1996), interviewed 10 tennis players between the ages of 12 and 23 years. Using an interview guide, the researchers interviewed the participants by phone. Three of the investigators reviewed the tapes and came to a consensus on the raw data themes. Inductive analysis leading to common themes, suggested that burnout was more related to social psychological factors than to physical reasons.

Summary

In this literature review, scholarly articles were presented on the Eastern philosophy of sport performance, the application of Eastern philosophical principles to sport performance, meditation (including physiological effects, psychological effects, and sport performance), and tennis performance (including cognitive strategies, recreational players, and qualitative research).

Chapter 3

METHODS

The purpose of this study was to qualitatively investigate the perceived effectiveness of using a Zen strategy to improve the performance of female tennis players in a competitive setting. A second purpose was to learn about their experiences. This chapter describes the design, selection of participants, Zen strategy training, the method of data collection, instrumentation, and data analysis.

Research Design

This investigation used a qualitative, semi-structured interview design. Qualitative, in-depth interview research opens up and expands the possibilities of knowing in sport psychology (Culver, Gilbert & Trudel, 2003; Dale, 1996; Jackson, 1996; Sparkes, 1992, 1998). In the past 15 years, a growing number of scholars in sport psychology have contributed to qualitative research in an effort to contextualize the experiences and emotions of athletes through in-depth interviews (Davis, 1991; Jones, Hanton & Connaughton 2002; Nicholls, Holt & Polman, 2005; Podlog & Eklund, 2006). Sparkes (1992) argued that the researcher is the instrument in qualitative study, and as such, must not be held to positivist forms of validity; he emphasized that the trustworthiness of data is important, and can be established through the coherence of various sources. The trustworthiness of the data in this study was strengthened through the use of participant journals and member checking.

Participants

Following approval by the Human Subjects Institutional Review Board at San Jose State University, the researcher recruited participants by mailing letters and flyers to tennis organizations and clubs in the Santa Clara Valley. The selection of participants was purposeful – to convene a group of athletes who were alike in their sport, ability, and gender. Tennis players who met the criteria for this investigation were asked to participate in a sport psychology study, whose purpose was to improve competitive performance. Eight female tennis players, between age 46 and 64, whose median number of years of experience was 8, participated in this investigation. Two of the participants were rated 3.0, and six participants were rated 3.5, with the National Tennis Rating Program (NTRP).

The NTRP is a rating system that has been used by the United States Tennis Association (USTA) since 1978, to help players classify their playing ability. The classification system ensures equitable playing opportunities for tennis players at every level, and is used to indicate competitive ability for USTA-sanctioned tennis tournaments. Moreover, a study sponsored by the USTA found that tennis players' self-ratings correlated highly to their actual ability (*National Tennis Rating Program*, 2005).

To advance the understanding and scholarship of women in sport, this investigation studied female athletes. Bredemeier (2001) asserted that the voices of girls and women are not audible enough amidst those in the more dominant paradigms. Women and men bring different experiences with them to sport. To gain clarity on the experiences of female athletes, researchers must put women at the center of their

investigations (Bredemeir, 1991; Krane, 1994; Roper, 2002). Krane emphasized that knowing the context of athletic experience is essential, and will broaden our knowledge of sport psychology.

Other than in mixed doubles, competitive tennis is played between people of the same sex. In an effort to simulate an actual competitive setting (Greenspan & Feltz, 1989) and therefore strengthen the meaningfulness of the data, the participants were all females. Participants older than 18 were selected to ensure that they would be mature enough to sit still throughout the meditation sessions. The focus of this investigation was on recreational players who have self-rated their ability to strategize, and use stroke technique effectively at the 3.0-3.5 NTRP level, during a competitive tennis match. In contrast to the participants selected for this investigation, beginners are apt to make frequent mistakes, and they have not developed the ability to modify their skills as performance demands change, such as in a tennis match (Magill, 2001). This researcher sought participants with enough experience that they were not preoccupied with learning skills. That ensured a consistent playing environment, which allowed the participants to focus on the experience of Zen training. It was important to create challenging situations for the participants so that they would be motivated to play to their greatest potential. In a model in which appropriate challenge and skill predict potential for flow, Csikszentmihalyi (1999) theorized that a low skilled player challenged above his or her ability level will become anxious, while a player with greater skills and low challenge will become bored. Although the researcher cannot control the athletes' effort, it was

important to establish an environment in which the participants were well matched and as highly motivated as possible to play their best.

Interviewer

The researcher conducted the participant interviews. Researcher bias is considered unavoidable in qualitative studies. Dale (1996) wrote that it is “useless to pretend that presuppositions do not exist, and most reputable qualitative studies acknowledge this and attempt to take it into account. Bracketing of one’s presuppositions should be a continuous process in qualitative research” (p. 312). In an effort to acknowledge and put aside biases, the researcher participated in a bracketing interview conducted by an experienced interviewer.

Procedures

The participants met twice per week for 6 weeks, to learn and practice the Zen mental strategy. The first part of each session was devoted to Zen concept-to-tennis instruction, Zen meditation instruction, and Zen meditation practice. In the second part of each session, the participants did physical practice. While the time required to learn various mental strategies is not known, researchers have suggested that 10 or fewer sessions are not enough. In a study that trained participants in stress management techniques for performance, Crocker, Alderman, and Smith (1988) concluded that participants needed more than eight 1-hour sessions to learn the techniques. Lerner et al. (1996) stated that participants who spent 10 sessions learning imagery did not have enough time to integrate it into their sport routines. In this investigation, there were 18 hours of Zen mental training instruction and physical practice, to help ensure adequate

time for the participants to apprehend and incorporate Zen into their sport experience. As Suzuki (1980) stated, “Where there is no experience, there is no firsthand knowledge” (p. 33).

At the first meeting, the researcher told the participants about the purpose of this study, informed them of possible positive and negative outcomes, assured them that confidentiality would be maintained, and asked each of them to sign a consent form. The participants were informed that they could leave the study for any reason, at any time. In addition to the Zen training sessions, they were asked to participate in two individual interviews.

The participants met two times per week for 1 hr 15 min sessions. In each session the researcher taught the participants about Zen concepts and how to apply them to tennis (Appendix D). The Zen mental training sessions involved four parts: instruction of a new Zen concept for 15 minutes; instruction and practice of Zen meditation for approximately 15 minutes; skills practice for 15 minutes; and application of Zen training while playing games against opponents within the group for 30 minutes. Including regular opportunities for the participants to compete contributed to the ecological validity of the research (Davis, 1991; Greenspan & Feltz, 1989; Thelwell & Greenlees, 2003). In a psychological skills training program for tennis, for example, participants practiced mental skills during 12 on-court sessions (Burton & Daw, 1994). At the conclusion of each week, the participants in this investigation recorded their experiences of using Zen mental skills for tennis, in a journal provided by the researcher. In this way, the

researcher was able to triangulate the data and better substantiate emerging themes uncovered in the analysis process.

Mental Practice

Participants were instructed to sit in the proper posture and get ready to begin meditation. The researcher clapped twice signifying the meditation had begun, and again clapped after 10-15 minutes to end the meditation. Meditation is not meant to be so uncomfortable that the practitioner gives up. For that reason, participants were allowed to sit in a modified lotus position. On the other hand, a certain amount of discomfort is natural when learning to meditate; the participants were instructed to ignore things such as minor itches and muscle fatigue, and to remain in an erect posture, as a form of discipline prescribed by Zen masters (S. Suzuki, 2002).

Physical Practice

All of the participants engaged in physical practice for 30 minutes. Following each Zen mental training session, the participants practiced tennis by warming up with a partner for 5 minutes on the court, hitting groundstrokes, volleys, overheads and serves. After the warm up, the participants played tennis games with a partner for 25-30 minutes, focusing on the application of the Zen concepts learned earlier in the session, and keeping score. The researcher spent an equal amount of time observing each of the participants while they were playing. The researcher took notes, but the participants' play was not formally assessed.

The first set of interviews, conducted 3 weeks into the intervention, served to evaluate the initial progress of the Zen mental training. In addition, the interviews

afforded the participants increased involvement in the study by being asked to share their experiences. During the interviews, the researcher collected descriptive data about the participants' tennis experience and level of play, mental skills use, and prior experience with Zen or meditation. The second set of interviews was conducted at the conclusion of the intervention phase, and provided the primary source of data for this study. This second set of semi-structured interviews was designed to elicit meaningful responses from the participants, while maintaining consistency among interviews (Esterberg, 2002).

Site

There were two meeting places. At Stanford University there were wide, stair-stepped benches to the side of the courts, which were used as the meditation and educational area. At Alpine Hills Tennis and Swim Club, the meditation and education sessions took place in a quiet room adjacent to the courts. In both locations the transition from Zen practice to the tennis courts was made easily. The room and bench area were spacious enough for the participants to sit comfortably during the Zen sessions. Four standard tennis courts were used for physical practice.

Instrumentation

Two semi-structured interview guides (Appendices B, C) were used to gather meaningful, in-depth data from each participant, over the course of 6 weeks. The purpose of the interviews was to explore the participants' perceptions of incorporating the Zen strategy into their practice, and to evaluate the perceived effectiveness of using Zen mental skills in competitive tennis. An expert, qualitative researcher reviewed the questions on the interview guides, and made suggestions for minor changes. The

researcher also participated in a bracketing interview with the assistance of an expert in qualitative research to uncover any hidden objectives or biases of the researcher.

Pilot

To strengthen the reliability of the data collection process the researcher conducted a pilot study with four female volunteers. The volunteers benefited from their participation by learning mental skills that could be applied to their tennis practice, and by using the opportunity to consider and assess their own use of mental skills in sport. Two Zen mental training sessions were conducted, each lasting one hour and 15 minutes. The volunteers learned about one Zen concept in each session and were taught to do Zen meditation. Following a 10-minute meditation, the volunteers were asked to incorporate the Zen strategy that was taught, while playing tennis games against each other for 30 minutes. The following week, individual, audio-recorded interviews were conducted with three of the volunteers, to refine the interview process and correct any problems with the interview guide.

Data Collection Procedures

Individual, semi-structured interviews were conducted in the 3rd and 6th weeks of the study, in a quiet location acceptable to each participant and the researcher. With the permission of the participants, the interviews were recorded on audio equipment to preserve the original content of their responses. The interview lengths varied from 35 minutes to 1hr 25 min, with an average length of 55 minutes. During the interviews, the researcher used pen and paper to highlight noteworthy information. Pre-determined questions from the semi-structured interviews (Appendix B, C) were asked, but the

participants were allowed to talk about their experiences and perceptions without a strictly imposed structure.

There were two interview guides. The first interview guide elicited information about the participants' experiences practicing Zen meditation, centering, breathing, and letting go in competitive situations. The second interview guide was similarly structured, but was designed to gather information about the over-all use of the Zen concepts, with special focus on empty mind, oneness, egoless attitude, ma, and effortless effort.

Data Analysis

The researcher transcribed the data from the interviews verbatim. The transcribed interviews were between 11 and 23 pages long, and averaged 15 pages. Copies of the transcripts were mailed to the participants so that they could verify that the transcriptions were correct; they were asked to make comments and corrections directly onto the manuscript (Durand-Bush & Salmela, 2002). In that way, the research was a collaborative effort, in which the participants actively participated in the interpretation and accuracy of the data (Esterberg, 2002). The researcher individually hand coded all of the data collected from the interview transcripts, and organized it into a list of raw data themes, from which higher order themes emerged. The themes were discussed and evaluated with the assistance of an expert qualitative researcher during peer review meetings. Based on the emerging themes, the data took shape into general categories (Glesne, 1999), which contributed to a theoretical position about Zen mental skills training used in women's competitive tennis.

Trustworthiness

Trustworthiness of the data and the analysis was established by creating trust and rapport with the participants, gathering rich data from the interviews, gleaned data from participant journals, and authenticating transcripts with the participants (Glesne, 1999).

Trust and rapport was developed over time, working with and teaching the participants twice a week for six weeks. The researcher established trust in the beginning of the interviews through casual conversation. The participant journals provided another source of data and confirmed information gathered from the interviews. Triangulation of the data ensured that the weakness of any one source would be counterbalanced by the strength of another (Esterberg, 2002).

Throughout the study, I met almost weekly with an experienced qualitative researcher for peer review sessions. Data collection, analysis, and progress were discussed. Over the course of the study, I recorded observations and personal experiences twice per week in a reflexive journal. Entries in the journal were typically one to two double spaced, typed pages that included field notes and thoughts about the Zen mental training sessions. Following, is an excerpt from one entry:

April 5, 2007

Fortuna and Erin were paired up today. They are both strong 3.5 players, but they did not appear to be in a rhythm, as they played. Later, Erin told me that she was not feeling well, and that she has been stressed. She told me that lately, she sometimes feels like quitting when she isn't playing well. Francis was playing with a lot of power in her shots. Her partner, Courageous, was not using much power at first – she was reflecting the shots back – but then she seemed to loosen a little, and began to play with more force. Roberta and Diane played at their level; I believe that they are relatively insecure in their game, so I will see how the Zen protocol works. At the end of practice, we gathered together, and I reviewed how to write in their journals, focusing on their experiences with the Zen strategy as tennis competitors.

The reflexive journal was a useful tool that helped me to consider my own thoughts and perceptions about the participants and the study as it unfolded.

Summary

The methodology selected for this research included a pilot study, a qualitative, in-depth interview design, and a purposeful selection of participants who were experienced tennis players who had not practiced Zen in the past year. The participants signed a consent form and were advised of their rights, and subsequently met twice a week for 6 weeks of Zen mental training. Further, they wrote about their experiences in journals and participated in individual interviews. I transcribed the interviews, and inductively analyzed and coded the data to uncover meaningful hierarchies. Finally, trustworthiness of the data was addressed through triangulation of the sources of information, authentication of the transcripts, and regular peer review meetings.

Chapter 4

RESULTS AND DISCUSSION

The purpose of this investigation was to qualitatively examine the perceived effectiveness of a Zen strategy to improve the performance of competitive female tennis players, and to learn about the athletes' experiences of incorporating Zen mental skills into their training. This chapter presents a thematic analysis of the data, and a summary narrative of each participant, which highlights their individual experiences with the Zen mental training.

Thematic Analysis

This section provides a detailed analysis of the data collected from individual participant interviews that were conducted at the end of the intervention. The analysis will be situated in the body of literature on Zen as it relates to sport performance. General categories, higher order themes, and raw data themes will be discussed in the context of theoretical positions about the application of Zen to sport performance presented in the literature. The interview transcripts were carefully read and re-read for salient themes, and a list of raw data themes was identified, and organized into higher order themes. The higher order themes were placed into four general categories: mental state, mental performance, technical performance, and social interaction. These categories and themes are presented in Table 1.

Table 1
Emergent Themes and Categories

Raw Data Themes	Higher Order Themes	General Categories
Anxiety decreased (4) Calmness (4) Enjoyment increased (3) Frustration managed better (1)	Decreased Anxiety	Mental State
Absorption in the game (1) Clarity (1) Empty mind (4) Part of the whole (1) Stillness (1)	Quiet mind	
Confidence increased (5) Going for shots (6) Handling pressure improved (3) Positive attitude (3) Self-judgment decreased (8)	Confidence	Mental Performance
Coming back from being down (3) Patience increased (2) Perseverance increased (2)	Determination	
Anticipating opponents' shots (4) Awareness on court expanded (7) Connection with other players (2) Focused (7) Present – taking it point by point (6) Ready (2)	Focus	
Power generally increased (5) Power feels effortless (3) Power felt at critical moments (1)	Power	Technical Performance
Reaching difficult shots (3) Reaction improved (5) Warm up improved/easier (1)	Agility	
Net play improved (3) Overheads easier (1) Serve feels dominant (1)	Strokes	

Serve generally improved (4)		
Serve not rushed (1)		
Serve more consistent (2)		
Strategy improved (2)		
Strokes improved (4)		
Strokes feel unforced (4)		
Performance improved generally (7)	Outcome	
Scores improved (4)		
Partner encouragement (2)	Partnership	Social Interaction
Partner relationships (2)		
Distractions from players reduced (2)	Player interactions	
Sharing Zen mental strategies (3)		

Mental State

The general category of mental state refers to a shift in state of mind that was apparent, but not discussed by the participants as being directly associated with performance outcome. There are two higher order themes in this category: decreased anxiety and quiet mind.

Decreased anxiety. The raw data themes within anxiety include decreased anxiety, increased calmness, increased enjoyment, and improved management of frustration. There was a distinction between the participants' feelings of less anxiety and feelings of calmness. In some cases, reduced anxiety preceded calmness; however in other cases, there were reports of less anxiety without calmness.

Four participants experienced less anxiety in their matches since learning about Zen mental techniques. Diane observed that letting go and practicing with an egoless attitude reduced her anxiety at a recent USTA match, in which there were some negative

interactions with other players. She described being less judgmental and having the ability to move forward. In that context she concluded, “I think I worry less, you know, about [what happened] in the past.” Egoless attitude taught the participants to remain balanced about both negative and positive events during matches to help minimize emotional responses and stay focused on the task at hand.

Fortuna talked about her anxiety getting in the way of playing well in the first part of her match. As a team captain with many demands upon her from other players, Fortuna described being very tense in the early part of her matches, but she felt that being in the study made a difference to her “in terms of trying to not get stressed out.”

Occasionally, anxiety had the effect of making Flo feel cold at the beginning of a match, despite having warmed up thoroughly. Practicing Zen breathing can help regulate the emotional element that occurs in competition, allowing the athlete to be more in control of performance (Ravizza, 2002). Flo felt that Zen meditation, centering and breathing helped her to overcome her anxiety. Flo:

I used to say [to my partner] that I was cold. I’d be tight and distracted. And when I meditate or do the breathing and whatever, I just feel that “warm calm”, is what I would call it. And it doesn’t mean I’m going to get every shot but I’m ready to do my best.

Only one of the participants dealt with on-going frustration in matches, but her progress during the study was illustrative of the potential application of Zen concepts where there is frustration. Erin experienced a great deal of negative stress in her life, which carried over into tennis matches. She was frustrated that she was not playing well,

and felt bad when her temper got the best of her at times. Small, personal successes were realized in moments when she could center herself and stay in the game, point by point, with less of the judgment that preceded her emotional responses on court. Wertz (1977) wrote that staying centered, and staying in the present could minimize the effects of anger, frustration, or judgmental thoughts.

Roberta, Rogette, and Flo found that they enjoyed playing tennis more since they participated in the intervention. Roberta explained that applying Zen concepts had the effect of deepening her experience playing tennis:

I do feel like [practicing] Zen makes me a better player. And it also makes me a more enthusiastic player because it's like it's opening up a new realm of thinking about tennis, other than just hitting the ball. It's like a more dimensional experience of the game.

This supports Wertz (1977), who asserted that although the objective may be to win, the reason for being in a sport is more complex, leading to improved skills and development of one's potential.

Quiet mind. The higher order theme of quiet mind refers to a state of mind that is free of conflicting thoughts. Gallwey (1997) observed that playing without thought allows the tennis player to intuitively know what to do, and respond effectively. There are 4 raw data themes in this higher order theme: clarity, empty mind, being part of the whole, and stillness. Courageous described oneness, a sense of feeling part of the whole game:

I've felt it more at the net – where these are the things that are happening – the ball comes and it's just, you know that string, of the ball goes here and so you put it there. So, yeah, I think at the net I am trying to and I have moments of feeling it, of oneness.

A few of the participants felt greater stillness, absorption in the game, and clarity. Four players spoke about experiencing empty mind while playing tennis. Empty mind refers to a state of having no extra thoughts and being totally involved in what one is doing. To attain empty mind in sport, Sandberg and Green (2000) recommended staying focused on a dominant theme of performance and allow all other thoughts to come and go. It is important to allow thoughts but not get hung up on them. Francis found that sometimes empty mind and effortless effort worked hand in hand:

Well, effortless effort is, when I start playing, wow – it's like I'm totally in the present. I'm not thinking, I'm just responding and it's amazing how magnificent it is!

Playing with an empty mind is not supposed to be complicated. Rogette, who was pleased that she was learning some new tools to help her play better, understood the idea of simplicity and expressed it succinctly: "I just serve and try to be empty and just get the right form."

Mental Performance

The general category of mental performance refers to cognitive processes that are associated with ensuing action by the athlete during a match. The two higher order themes within mental performance are confidence and focus.

Confidence. Increased confidence, going for shots, handling pressure, positive attitude and decreased self-judgment are raw data themes within the general category of confidence. According to the participants, these factors facilitated their ability to play confidently during a match.

Five participants discussed experiences of increased confidence as a result of being in this study. Erin was often scheduled by her team to play in singles matches, but she said that she was not playing well as a singles player, and was losing confidence. However, she felt that being in the study provided her with a different perspective. Through the practice of Zen concepts an athlete develops a view of sport that has to do with the struggle with the self than winning or losing (Abe, 1986; Ravizza, 2002). Erin:

I'm approaching [singles matches] a little differently in the standpoint of, okay I'll just go out, and I'm feeling a little more confident just relying on myself to do what I have to do to win a match, or to do what I have to do to hang in a match and still play a good match, whether I win or lose.

Roberta came to the study with clear reservations about her physical game. She was apparently all too willing to lose, but found a balance, with playing well as her priority. In her second interview, she revealed an elevated level of confidence and playing well:

I'm gratified and sort of startled that I'm playing well enough to win. When I started playing USTA, I'm like, well the only way I'm going to get better is to play more, and the only way to play more is be willing to lose. But I'm feeling

like I don't have to be willing to lose anymore! I stand a shot no matter who I play.

All of the participants described improvement in their ability to play well when they stopped comparing themselves to better players, refrained from too much celebration, or getting down on themselves in a match. Courageous, who wanted to play more boldly at the outset of the study, described a shift in her thinking and playing:

If I, you know, see myself as a tentative player and I see myself as a weak player that's how I play. Whereas, if I just hit the ball and respond to the ball and not have the ball be the effect of my self-image, I play much better.

Flo discussed the downside of sizing up opponents prior to, or during a match. She acknowledged that she has played opponents who seem easily beatable, only to realize halfway into the match that they were much better than she thought. However, it is equally as dangerous to believe that the opponent will dominate. Flo talked about not allowing judgment and the expectation of losing to intimidate her:

I tried to get away from the fact that Samantha is really tall. So, together, one [opponent] hits really hard and the other one can put it away really hard. So, maybe it helped going into it that I had no real expectations, but part of the no expectations is the Zen thing, too. I mean, I was just thinking, okay, let's play. And like, six months ago, I would have really thought, 'Oh Samantha – I like Samantha – but there's no way we're going to play well!'

Part of the struggle toward self-development is freeing oneself from judgment (Abe, 1986). Flo realized that she needed to put aside her ego, and the fear that she

would lose. Ultimately, she transcended her fear and played much better than she expected. Abe wrote that detachment from ego and desires frees people from false thinking. It is in that moment of seeing things just as they are that the athlete is free to perceive what to do on the court without the impediment of ego. Similarly, Ravizza (2002) observed that practicing with a Zen-mind facilitates the transcendence of ego, which can hinder the ability to play in the moment with relaxed concentration.

Three participants talked about handling pressure better. In a competitive match, the pressure to win a point can sometimes be overwhelming. Tennis players must be able to let go of tension and stay in the game to play their best. Roberta experienced feeling more in control in pressure situations. In a closely contested match, Flo was serving, and stayed present as she served:

Actually, then I served at 11-10 and I did a beautiful serve, and anyway, it was a long point and we just didn't quite get it, [but] I thought at that point, that's neat that I...that was huge pressure! Often, you know, you'll blow a serve at that point, and I was so in my mode. It was just beautiful. And I was just thinking, 'Just play the game, play the game.'

During the study, several players developed a more positive attitude about how they play tennis, and several were more often able to turn a game around and come back when they were down. Going for shots was important for many of the players in the study. Six participants reported that they were letting go and going for their shots more often. Fortuna explained how letting go and going for her shots increased her chances of being able to come back from being down:

What's different though, is in the past, if I was down 3-5 and it was a really important game, I'd really be real tentative because I wouldn't want to blow the shot, because I knew we'd be losing the set. But this year, I'm just really focusing more on what I'm supposed to be doing is hitting the ball underneath and extending my racquet and just going for it, as opposed to saying this ball has to go in.

This supports Moore and Stevenson's (1991) assertion that skilled athletes must let go, and move naturally for optimal performance. Fortuna found that once she could do that, and not hold back, her shots were much better.

Determination. Patience, perseverance, and coming back from being down are raw data themes in the higher order theme, determination. Tennis is not a sport with a running clock. Games continue until a player or team wins, and the players who persevere believe that they always have a chance to come back and win. Three participants felt a shift in their ability to stay in the game and remain determined when they were down. Erin:

Even when I'm down, I sort of just think about one point at a time - you know, I have been down a number of games love-40 and just come back and won them, and that's not giving up.

Focus. Anticipating shots, awareness of the court, connection with other players, being focused, being present, and being ready are raw data themes within the higher order theme, focus. Jackson (1995) emphasized that Zen develops qualities that promote

greater concentration, the ability to read opponent's intention and movement, communication with teammates, and turning negative events around.

Several participants felt more connected to other players, experienced greater anticipation of their opponents' shots, and had a sense of readiness in games. Rogette felt that the oneness exercises helped her to be ready for the ball coming back over the net. Instead of dreading a hard-to-reach shot, she embraced the idea of connectedness of everything on the court, including the hard return of the ball. That connectedness fostered concentration that also helped her to calculate the opponents' next moves. She talked about being complimented by another player who said, "Well, you two were every place! Where-ever we hit the ball you were there. You just anticipated well." Jackson (1995) asserted that Zen seems to develop qualities that promote greater concentration and the ability to read opponent's intention and movement.

Seven out of 8 participants described experienced increased awareness of the court and of other players. In their presentation, Sandberg and Green (2001) pointed out that practicing Zen awareness helps athletes to move from one type of focus to another. In the Zen mental training sessions, the athletes practiced awareness of other players' movements through a variety of exercises. In one exercise the participants paired up; facing each other, one athlete would slowly take one step at a time in various directions while her partner mirrored the movements in real time, as in a dance. Another exercise taught the athletes to expand their awareness beyond themselves. Flo talked about using awareness to see what was going on in the game strategically, and said that it helped her to be more present in one of her recent matches:

I was doing that [expanding awareness] exercise, more on the court, just seeing where everyone was and maybe what I could do in the context of the bigger court, and I was just totally into the game.

Francis, who talked about awareness in the context of readiness, and a connection with other players, commented, "...at the net, you know, [I am] really being ready, really looking. I'm becoming more aware of the others, oddly enough, which is nice."

Diane described that she was "seeing" her practice partner better, and noted that being more aware of her doubles partner helped her to move with her partner better.

Diane:

I have felt more the distance – I didn't pay attention to distance when I played before. But the day we practiced that, I remember I said to Roberta, 'Oh now I can see you!'

One of the biggest changes in Roberta's game was developing more court awareness that translated into better use of strategy. She felt that learning to use the concept, ma, helped her to almost predict where the ball would go. Roberta:

I feel like [awareness] is the biggest change, and I feel like I've made a lot of changes, but it's the biggest change I've made in terms of really being so aware of what the other person is doing. I can't always succeed – like if the person's at the net and it's coming to her and she's raising her racquet. I may not get back in time to get the ball, but I know that's what's going to happen. It's almost like seeing something before it happens.

The ability to see and know what is going to happen seems like something only Roger Federer can do. But on a more fundamental level, being aware of and responding to the opponents' actions is essential. Bates (1982a) discussed the value of awareness training in developing mastery of the self, emphasizing that awareness of breathing, emotion, and thought develops the physical and mental potential of athletes. Seven of the participants talked about being more focused in their matches. In the intervention, focus was developed through meditation, and breathing exercises, and focusing awareness just below the navel. Sandberg and Green (2000) suggested breathing and focusing exercises to help an athlete stay mentally and physically centered. Most of the participants used breathing and centering exercises before serving and receiving serve. In one match, Flo had a weaker partner, but she used the Zen concepts to stay focused:

My partner was the weakest of the four of us (three of us were 3.5's and she was a 3.0). So, I was using all my [Zen] techniques, and we won 6-2, and we won the tiebreaker 10-1. It was like, "Oh my gosh"! But I think it was really that they just were not focused, and we were.

Rogette said that one of the ways that she was improving as a player was in being able to watching the ball better. She said that she felt more engaged with the ball.

The raw data theme, being present, refers to playing point by point without thinking ahead of the game. Athletes who fail to focus on the present and get ahead of themselves are more likely to commit errors (Ravizza, 2002). Six of the eight tennis players in this study said that they were feeling more present in matches. Erin related being present to having greater focus:

I can't say I've gotten steadier, but just maybe being able to stay a little more focused. Even when I'm down, I sort of just think about one point at a time.

Diane enthusiastically related being present and having increased focus to a successful outcome in the games. I asked her how staying in the present moment translated into her playing:

Diane: I think I am more focused.

Suzan: And then what happens?

Diane: I win the points!

Technical Performance

The general category of technical performance consists of the themes relevant to physical performance during a match. Strokes, movement, power, and outcome are the higher order themes in this category.

Strokes. There are nine raw data themes within the higher order theme of strokes: net play improved, overheads easier, serve is dominant, serve generally improved, serve not rushed, serve more consistent, strategy improved, strokes improved, strokes are unforced. Seven participants noted improvement in their serves and strokes, though not all in the same stroke.

Four of the participants felt that they were hitting more effortless winners. Wertz (1977) wrote that Zen practice in sport leads to extraordinary, effortless performances. In the post-intervention interviews, the participants often said that they could not make effortless effort occur, but they thought that the Zen techniques were helping them to

increase the likelihood of playing effortlessly. Flo talked about playing an extraordinary point:

But I mean in the last point I just shot it down the line. It was really hard – one of the best points I’ve ever done! And I was thinking, “Whoa, I didn’t try.” I mean, that was the thing, it was all kind of fitting together in that point.

The participants noticed individual improvements at different rates. Rogette said that she was not winning more, but the quality of her strokes, including her overhead, was improving, and attributed her performance gains from this study to practicing empty mind and letting go:

Well, I think that almost from the beginning, I have been hitting better shots. Harder shots. My serve is better. Like I said, I’m not sure I’m getting more points, but I feel like I’m playing better – from the beginning. So, you know I like that. It feels good, because I’ve never really been a strong shot person.

Agility. The higher order theme of agility refers to a quality of ease in movement and making shots. Five of the participants noticed that they were reacting to the ball better. Diane talked about reaction in terms of using the Zen concept *ma* – observance of space on the court and/or space of time. Thinking about *ma* helped the players to feel that they did not have to feel weak when confronted by hard hitters. Instead, they realized that by becoming aware of being in the space, and belonging in the game, they could respond better. Diane:

The other [player] had a strong serve but I could react I think, and so I tried to back up more and think about the space between, what I could do.

Flo was pleased that meditation and centering helped her to feel warmed up before warm-ups. Roberta commented on her improvement in reaching what she referred to as desperation shots: “It’s more of a sense of, now that I can actually see that I can [get to difficult shots] I can do it more often than just when I’m desperate to do it.”

Power. Power includes the raw data themes, increased power, effortless power, and power at critical moments. Five participants felt that their shots became more powerful as a result of taking part in the intervention. Many players try to hit the ball too hard, and the harder they try the worse they play. Ravizza (2002) noted that a coach often approaches this issue with increased skills practice, rather than addressing the tension created by trying too hard. He stated that releasing the tension by letting go allows the athlete to feel the right shot at the right moment. Courageous explained her experience playing with greater power:

I think I play – I hit the ball more smartly. More smartly in the sense of cleanly and probably a little bit harder. For example, you see it with all players – if you ever try to hit the ball hard you usually hit it into the net or something. But if I’m just watching the ball, and it’s coming to me, I usually hit it with more authority.

Roberta was surprised by the changes she noticed during this study, and particularly by the feeling of effortless effort and power. An exchange with Roberta during our post-intervention interview reveals a change in the way she looked at her own power as a player:

Suzan: How would you say that the Zen concepts have affected your power?

Roberta: People have commented over the course of the last few weeks, ‘oh you’re a powerful hitter’, and I have never thought of myself as being a powerful hitter. But it’s been so consistent in terms of people saying, ‘You’ve got a lot of power on your ground strokes.’

Suzan: And that’s something new?

Roberta: Oh, it’s absolutely new – nobody’s ever accused me of having power before. It’s absolutely new. And I do feel like it just feels more effortless, but faster and stronger. But not out of control. I’m perfectly capable of hitting a powerful shot that hits two feet out, but I’m doing that less. It just feels like really faster and stronger, but just more in control.

Outcome. This study examined the perceived effectiveness of a Zen intervention on the performance of 8 female tennis players. The two raw data themes falling under outcome are, performance generally improved, and score improved. Seven of the 8 participants responded that this study was effective in improving performance. Rogette experienced playing better, but her game scores did not noticeably improve:

I’ve been playing on two teams now, and my record is kind of mixed. And I would say – I think I’m playing better, but my results are not necessarily better, and I equate that to I’m still learning to use these new skills.

In our post-intervention interview, I asked Diane to talk about how it’s going, emptying her mind of thoughts. She said that it helped her performance. “In the two matches I played recently – competitive matches – it helped me to play better, to be more

focused.” Abe (1986) stated that sport is very much like the battlefield, in which the warriors had to be able to still the mind to stay focused on the present moment.

There were four participants who spoke about their scores improving. Fortuna was one who observed a positive change in her win-loss record:

Suzan: And would you say that being in the class has made you a more effective player?

Fortuna: Yeah.

Suzan: In a qualitative sense – like ‘it feels better, I feel better, I think I’m playing better’? Those kinds of things, or end results?

Fortuna: I would say both. You know, I think when I go for my shot I hit more winners. When I push a ball back, they just always get to it, even if I’ve got this great angle if it’s not hard enough.

Suzan: Because you’re playing with really good players.

Fortuna: Yeah. You know, good fast players. So, I would say it’s both qualitative and quantitative.

Social Interaction

The general category of social interaction refers to the group of themes having to do with behaviors among players. The higher order themes that emerged are partnership and player interactions. In some cases, the skills learned in the Zen mental training intervention enhanced the teamwork between partners, and in other cases, being centered and focused allowed players to not become distracted by other players’ personalities or antics on the court.

Partnership. The raw data themes in partnership are partner encouragement, partner relationships, and mindfulness of partner. Partner interactions and teamwork were important to the participants. Although the interview was not designed to probe for data regarding partnership, worthwhile themes emerged. All of the participants in this investigation played doubles matches during the season in which this study took place. The interviews reflected their perceptions of Zen strategies on working well with partners.

In one especially tough match, Flo was encouraging to her partner by staying so focused in the game, and playing one point at a time. Flo:

It was brutally hot, and my partner told me if I hadn't been so determined, she said she would have quit or probably given up. She said, 'You looked like you were so going to persevere that it made me keep going.'

Courageous felt that being in this study furthered her ability to "interact with her partners in a constructive way"; not comparing herself negatively to the better players, but just focusing on playing.

Player interactions. The raw data themes within player interactions are: distractions from other players, and sharing Zen strategies. The participants frequently talked about distractions that came from players with difficult personalities. A frequent complaint was that opposing players sometimes question line calls repeatedly. Diane expressed her emerging ability to handle player distractions better by using the concept letting go:

So, now I feel, yeah, I think I let go more about bad feelings, or when people around are not very nice. I just let it go, and I say this is their problem.

Flo played a woman who was known for being disruptive just to get under people's skin. Flo replayed a situation that happened to her:

We're a little bit ahead, and I'm getting ready to serve. I'm doing my breathing, I'm feeling good, and she makes some joke. She said, "Is there something in your eye?" And then she said, "Oh, are you doing your Zen breathing?" or something that cracked me up. She said it in such a funny way that I busted up, and I totally lost my focus. I couldn't get back my breathing. I was just – I was just rolling with laughter.

In their next match against each other, when the woman tried to distract her again, Flo related that she was ready, and stayed in control using the Zen breathing.

Two participants spoke about enthusiastically sharing Zen techniques with other players who were interested. One was Rogette, who shared a Zen exercise for oneness with another doubles team. The exercise was about feeling so connected with the ball on the other side of the net that you want it to come back. Rogette got them excited enough to try practicing the Zen technique for themselves. Rogette explained that the other players told her they used the technique, and did very well in their next match:

She said, 'If we hadn't done that [technique], we may not have been able to get that far.' They ended up losing in the tiebreaker, but they felt it kept them together as a team, doing something, and they may not have done as well. I don't know – I wasn't there. But this woman – now I played her yesterday – I've

known her for years, and she played the best yesterday that I've ever seen her play.

The participants' perception of Zen mental training can be mediated by its perceived value to others. The participants could share the Zen concepts with other players, or in some cases not share the information that others might desire. Flo:

Yeah, and that woman who hates to lose, who's kind of mean about it, she knows I took this [Zen class], and I don't think that she likes that I did it because I have methods now.

Roberta thought that the Zen mental training was too good not to share:

I feel like I'm the publicist for Zen at this point because I say, 'You should do this, you should try it, it's really great, it's really easy!'

Bate (1982a) wrote that developing awareness, minimizing thoughts, practicing effortless effort, breathing, and viewing oneself less judgmentally contribute to the development of the human potential. There were many examples from the participant interviews, which supported Bate's assertion. The participants often remarked that the Zen strategies were helping them to progress toward their highest potential.

Although the participants were not taught traditional sport psychology techniques such as attentional focus (Landin and Hebert, 1999; Ryska, 1998; Weinberg, Gould Jackson and Barnes, 1980), self-talk (Harvey, Van Raalte, & Brewer, 2002; Ryska, 1998), or imagery (Lerner, 1996; Martin and Hall, 1995) the participants sometimes experienced results consistent with those sport psychology interventions. For example, Diane described that "refraining from negative thoughts" helped her during her games.

The participants were taught to have a non-judgmental attitude, which may have a similar outcome to, but is not the same as positive self-talk because a non-judgmental attitude reduces all thoughts but does not replace them with positive thoughts. The Zen concepts, oneness and ma, were sometimes discussed by the participants in terms of increased awareness, which is an outcome comparable to that of attentional focus. Imagery was used twice during the intervention as an aid in not being as judgmental, and as a way to practice broadening one's awareness; it was not used to practice task relevant images, to relax while visualizing a competitive situation, or as a tool to motivate, i.e., imagery was not used in a traditional sport psychology application.

Over the course of this investigation, much thought was given to whether the Zen strategy might be likened to traditional sport psychology strategies, phrased differently. However, Zen techniques provide a unique approach. The study was conducted with an interest in following the Zen way; instead of counseling the athlete how to think, the teacher or coach simply shows the way to observe oneself. All of the Zen lessons essentially came out of the notion of having a quiet mind to allow self-observation and self-knowledge to occur. While the results may resemble those in traditional sport psychology, the athletes may in fact arrive in a different place as a result of this comprehensive intervention.

Participant Narratives

Each participant came to the study informed about herself as a competitive tennis player through a unique set of lenses. The participants' journals and interview transcripts provided a window into how they perceived themselves as athletes. The following

section describes the individuals and their different, sometimes transformative experiences encountered as a result of being in this study.

Courageous

Courageous came into the study with doubts about applying Zen to tennis, but she wanted to develop a more courageous persona on the court. During the study, it was clear that she made some important changes. In our first interview, Courageous described herself as a steady, calm, pusher, “someone who never hits the ball very hard, just sort of puts it back,” but said that she wanted to be “something else” – courageous. In our first Zen mental training sessions, I observed that she was consistent but did not move around the court very much. In a few weeks time she began to take more risks and come to the net more often. In our second interview, the totality of her experience came to light. I asked her about her experience in the study:

I think it began with some skepticism, because I felt like, well I know that. You know, the principles I knew. And it evolved into me realizing things. And also it began with anxiety around meditating because meditating has always been, the breathing thing was always difficult for me. So, being able to meditate a couple of times was a wonderful experience. And also I think I began to see – to be able to be a little bit more honest with myself – that in fact the reason I’m tentative comes from an attitude about what my game is. And I guess I came to feel like who you see yourself as, out there, has a lot to do with how you’re going to play, and I’m finding a calm way to try to take more risks.

Wertz (1977) stated that inner mastery is of value in sport performance, and that Eastern techniques should be channeled toward oneself. It seems that Courageous made a personal leap by reflecting about herself as an athlete.

Diane

Diane grew up in a culture that did not support women participating in sport. Now living in the United States, she appreciates the athleticism and competitive drive in the women she plays with, and would like to play more like them. During the study she expressed her desire to stop being so polite and congratulatory to her opponents during matches, and to work on her own strength as a player. Moore and Stevenson (1991) recommended a non-judgmental attitude to help athletes let go and play their natural game. In the third week of the intervention, Diane wrote in her journal about letting go, having a quiet mind, and staying focused on her game.

Letting go: Very important notion to work on. I really tried to work on refraining [from] negative thoughts and words, and it helped me a lot during the game. This allows me to be more focused and centered. I know I have the tendency to point [out] my mistakes and congratulate my partner or my opponent for nice shots or moves. It was difficult to stay quiet because tennis is very social for me. In a real match, I really see a difference when I stay focused on breathing, centering and staying quiet.

Flo

Flo appreciates the social element of tennis and likes friendliness among competitors, but she also loves to win. In our first interview, two issues seemed to stand

out: the frustration of feeling powerless against the ups and downs and the experience of feeling cold at the beginning of a match because of nerves. In the third week of the study she wrote in her journal about some successes, which motivated her to continue practicing the Zen mental training:

Since starting this class, I have noticed that my game is becoming more consistent overall. The combination of meditation before play with centering during play allows my mind and body to “warm up” sooner, allowing me to play more relaxed and focused. I have particularly noticed that my serve has stayed more consistent than before. The playing with “abandon” concept we focused on this week has also been helpful in clearing my mind of chatter.

This supports Wertz (1977), that Zen meditation and letting go can promote clear thinking.

Rogette

In our first interview, Rogette expressed determination to keep up with her contemporaries, and talked about not wanting to lose ground to the younger players. She is 64 years old and one of the stronger players in this study. Rogette’s journal entry at the end of week 2 reflected her awareness of physical age and perhaps the counter balance of Zen mental training that she hoped to use to keep her on top of her game.

My serve was better than usual – won several love games. Our opponents were younger and nervous. They got better as match went on but I kept focused – we won 6-3, 6-3. I like the inner strength I’ve been feeling.

Francis

Francis played with excellent strokes, but was concerned about her head getting in the way of her game. She wanted to be a “quieter” player, thinking less and moving more efficiently. Injuries and doubts nagged her throughout the study, but she was able to make an important shift early in the study that changed the way she viewed herself, and that seemed to have an effect on how others perceived her, as a competitor. In my second interview with Francis, she talked about using centering and breathing; here, she describes the effect on her serve:

For me, really, just taking time for serving, really slowing down, really taking my time and not rushing – that really sets the tone, I feel, for my serve. I feel dominant. I feel like I’m in the dominant position and it’s great. And you know, if they have to wait, that’s okay. It’s really nice instead of rushing. And so that’s been really....I think if the study did anything for me, it’s that. And that happened on the first time. It was kind of amazing.

This provides support for Ravizza’s (2002) statement that practicing with a Zen mind helps competitors experience relaxed concentration.

Erin

Erin is a strong, calculating player with an ability to place her shots well. Early in the study she expressed a desire to work on her negative stress and find a way to improve her attitude about playing. In our interviews, she sometimes talked about her failures, but then would catch herself, trying to be more upbeat. She tried to tap into some of the Zen

strategies as reminders to herself, but ultimately struggled with quieting her mind. On her ability to make use of the Zen concepts she said:

I think I was more conscious of [the Zen concepts] so, except for this last match or so, I was making a...it was definitely something I was thinking about. It was a conscious effort to think about some of these things, to – you know – force myself to – if I can't get myself focused – to make an effort to get myself focused, do some of the things I have to do to do that. And staying balanced and letting go – all that stuff. Yeah, it's sort of becomes these little things that I'm running through my head.

Practicing Zen concepts such as letting go helps the athlete to advance as a whole person (Sandberg and Green, 2000). During the study, Erin continued to wrestle with her thoughts, but made progress being less self-deprecating.

When I'm doing okay in a match, I can tend to let things go anyway. Although, that's been better this year than last year – I think that's one of the places I've improved on, too. But that's where [letting go] comes into play the most is when I'm not playing particularly well, is just letting go and not beating myself up.

Fortuna

Fortuna was the captain of three teams at the time of the study, and often felt unable to settle down until midway through her matches. She talked about her captain-related stress in our second interview:

You know. Before I leave the house, I'm thinking what have I missed. My mind's going, you know, I don't just bring my tennis racquet and balls. I have to

bring the scorecards, and the tablecloths, the napkins, the cups. So, I'm going into every match very tense.

Although Fortuna said that she did not connect with the latter concepts presented in this study, she talked about some improvement with her stress by thinking about breathing and the peaceful feeling of meditation. This corresponds to Ravizza's (2002) point that Zen breathing strengthens the connection between the mind and body. Fortuna:

This class has really helped, in terms of trying to not, not get stressed out. And I don't think I'm playing as tentative as I was. So, I think I'm going for more of my shots than I used to.

Roberta

In my first interview with Roberta, she described herself as more of an intellectual who relied on her mental game, than as an athlete. She joked that her sport in high school was reading. However, during the study she went through some interesting changes in her self-perception as a tennis player; she became much more of a physical force on the courts and incorporated more strategy-based awareness into her game. In our second interview Roberta described how her experience playing tennis felt more complete as a result of being in this study:

It's that sense of seeing it at a different level. Not just hitting the ball, but that experience of being involved more in the whole court, the opponents' court. It's both physically and intellectually more interesting, and therefore more enjoyable.

Summary

A qualitative analysis of the perceived effectiveness and the experiences of female tennis players who practice Zen mental training, revealed four general categories. Higher order themes in each category provided a framework that guided the analysis. The participants' perceptions and experiences were compared to theoretical positions held in sport performance literature about the application of Zen philosophical concepts in sport. The comparison revealed similarities between theorized expectations and the actual experiences of athletes. Unlike previous studies, this study applied Zen concepts in a competitive setting, and more deeply explored the performance aspects of Zen mental training. Participant narratives provide a context for understanding their individual experiences.

Chapter 5

CONCLUSIONS

The purpose of this investigation was to qualitatively examine the perceived effectiveness of a Zen strategy to improve the performance of competitive female tennis players, and to learn about the athletes' experiences of incorporating Zen mental skills into their training. The analysis revealed four general categories, including mental state, mental performance, technical performance, and social interaction. These categories provided the underlying structure for understanding the participants' perceptions. The participants perceived the greatest number of performance improvements in the mental performance and technical performance categories. Specifically, confidence, focus, power, agility, and outcome resulted in the most improvements in performance.

Most of the participants suggested that they were playing with more self-confidence in matches as a result of being in the study. Coming to the courts with a less-judgmental attitude seems to be related to their confidence. During the Zen sessions, the participants were taught about egoless attitude. They learned to reduce the mental chatter of making comparisons to others, being self-congratulatory, or self-denigrating. The reduction of distracting thought, and in particular the reduction of self-defeating talk seemed to be a key factor leading to greater confidence.

The participants spoke of letting go as a factor that allowed them to hit the ball with their natural swing. They were less caught up with thoughts about hammering an easy shot for a winner or trying to make an amazing overhead. Importantly, they were able to transfer what they learned in the Zen mental training sessions to the competitive

arena, and go for their shots in a more relaxed manner, feeling a new level of confidence. Some participants felt that they could go for their shots more because they learned to relax in meditation and carried over the feeling of quiet mind when they centered and breathed throughout their matches.

Another important aspect of performance was exhibited in the participants' statements of increased ability to focus in competitive situations. Many of the participants talked about feeling more present, taking the game moment by moment. Seven of the eight athletes discussed having more focus than before. This was experienced in having a more dominant serve, the ability to ignore disruptive opponents, and the ability to stay in a game one point at a time. The participants typically used centering and breathing before serving, receiving serve, or between points to re-focus.

Experiencing heightened awareness during a match was evident in seven of the eight participants. In some cases it helped them to redirect their focus appropriately. One athlete explained that she could broaden her focus using oneness exercises learned during our Zen mental skill sessions. Broadening her focus could take her mind away from feeling negative about a bad shot, allow her to move better with her partner, or see what the opponents were doing so that she could revise her strategy. The Zen concept, *ma* (spatial and temporal awareness), also seemed to have had an effect on the players' ability to monitor the court and respond more effectively to challenging shots. A few of the players especially liked *ma*; it helped them to accept that they were in the game with aggressive opponents, and to use a new awareness of space to feel connected with the entire court.

There were a number of participants who felt that they were hitting more powerful, authoritative shots. They spoke of power in terms of being more willing to go for their shots, or in terms of letting go, and effortless effort. This observation of increased power could be related to many or all of the Zen concepts working together. Centering for mental and physical stability, breathing, letting go, and a non-judgmental attitude leading to increased confidence are some of the Zen concepts that work in favor of playing with greater power.

Agility is an important component of tennis. Five participants discussed agility in terms of getting their racquets on the ball faster at the net, picking up shots that come to their feet, and getting to difficult to reach shots. The concepts of oneness and ma, which are believed to promote awareness, may have an effect on reaction time in tennis players.

Most of the participants discussed the outcome of matches in terms of playing their best and giving it their all. All of them told me that they always want to win, but they would rather play well and lose, than play badly and win. They expressed a desire to reach their maximum potential. Although only four of the participants noticed better game and match results, seven of the eight said that they believe their tennis performance had improved. All of the participants felt that with continued practice they would be able to make the Zen concepts their own. Although the participants learned at individual rates, and grasped certain concepts differently from others, they all told me that the Zen concepts had provided them with tools which would help them to continue to improve as competitive tennis players.

Recommendations for Further Study

Recommendations for further study are based on what was learned about finding a place to conduct the intervention, recruiting volunteers, conducting the mental training sessions and interviewing participants.

Finding court space for eight players was challenging. The search for four courts with an adjacent room for meditation practice was time consuming. Most academic institutions schedule their tennis courts for student classes and team use throughout the day. The athletic facilities director at San Jose State University was willing to allow me court time, but could not guarantee that I would not be bumped from a classroom if an unscheduled instructor needed that room for any reason. Local recreation departments would charge high rental rates, and did not have four courts that I could use at one time, or a room. A few tennis directors at local clubs were quite enthusiastic about my research, but club policy prevented me from bringing non-club members to play. Finally, a friend introduced me to the tennis director of a university near my home with outstanding courts, and to the tennis director at a large local club. With that connection, those individuals allowed me to conduct Zen training sessions in one location on Monday morning, and the other location on Thursday at noon. The two meeting places were near my home, and provided a workable, if not ideal, solution.

A second challenge was in the recruitment of participants. Dozens of highly interested tennis players responded to my ads, but most of them could not attend a Monday and Thursday session, at different times of the day. Investigating athletes on

existing club or school teams might resolve the problems of getting court time and participants.

A week into the study, the participants told me that they mostly played doubles, and asked if they could play doubles during the Zen session practice games. I had planned my lessons around singles play, and wanted them to practice alone, to reduce the possibility of the partner changing the perceptions. However, in the 4th week, I let them play doubles on days that it made sense within the scope of the lesson plan to do so. I would recommend advertising either for singles, or for doubles, only, and teach the Zen concepts to one or the other group.

The preparation for this study was extensive and somewhat costly. In an effort to conduct the Zen meditation correctly, I constructed authentic Zen meditation cushions. I purchased new tennis balls each week, and, though it was not required, I thanked my participants with gift certificates to a local tennis shop. I was very grateful to them for staying in the study, having learned that along the way, many things can go awry. I was fortunate that the multiple aspects of preparation and follow-up came together.

This was a complex study. As a master's thesis, it was ambitious to chart my own course, researching and writing about a topic not previously studied, selecting a methodology that emphasizes the experiential and qualitative aspects of performance, organizing all of the components, teaching a new intervention, and finally conducting, transcribing and analyzing interviews. Finding the location, recruiting participants, and transcribing interviews is time consuming, and I recommend building in ample time to accomplish those tasks. Conducting the interviews requires practiced skills. Participants

might talk very little, or they might talk too much about unrelated topics. I experienced both types of participants in my interviews. I recommend having a plan to deal with less forthcoming participants.

Areas for Future Research

Although much has been written about the application of Zen concepts to optimize sport performance (Dahlkoetter, 2002; Gallwey, 1997; Huang & Lynch, 1992; Jackson, 1995; Lynch, 2001; Lynch & Huang, 1998; Orlick, 2000; Sandberg & Green, 2000, 2001), this was the first study that rigorously investigated Zen concepts used in competitive sport. Future research should include Zen mental training in the elite, youth, and male populations. Promising avenues of study could also be found in the investigation of Zen mental training for doubles partners, and in other sports.

Implications

The conclusions reached in this study indicate that Zen mental training had merit in improving sport performance for this group of athletes. The results could be of interest to sport psychology consultants, coaches and athletes who would consider implementing similar mental training programs of their own. The Zen mental training guide that was developed for this study could be useful in those endeavors, and as the basis for future research. Through the use of qualitative methods this investigation has contributed to the understanding of the experiences of female athletes and to the body of qualitative research in applied sport psychology.

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Date: _____

Appendix B - Interview Guide 1

1) Tell me how you got started playing tennis?

2) What interests you in playing competitively?

Why do you keep playing?

What if anything would make you stop playing?

3) Have you practiced mental techniques for sport before being in this study?

Which mental techniques have you practiced?

How do you use the technique or strategy?

When do you use the technique or strategy?

What effect does it have on your game?

4) How did you feel about learning the Zen strategy?

5) How did you feel about using Zen concepts out on the court?

6) I'd like to know a little more about how you used the Zen concepts while playing games:

In the terms of Zen awareness did learning about *Centering* affect your playing?

Tell me how *Letting Go*, worked for you?

Tell me about using the *Empty mind* concept?

Were you able to experience *Oneness* in any way during games?

Did using *Awareness of Breathing* make a difference to you while playing?

Tell me what it meant to you to be an Egoless competitor.

What were your experiences with incorporating ma (use of space, time) into tennis?

How, if at all, did you experiences of effortless effort during game play?

Do you experience about the same/more/less E.E. since learning Zen?

7) Were there any difficulties for you learning the Zen concepts?

Tell me more about _____(difficulty).

Did that change with time?

What did you experience while meditating?

8) How would you say your experience playing tennis has changed through the process of participating in this study?

9) Was there anything that you or others noticed about yourself as you went through this process?

10) Is there anything that you would like to add?

Thank you for you time.

Appendix C – Interview Guide 2

- 1) How has your season been going?
- 2) What has been your biggest challenge this season?
- 3) What has been your biggest success this season?
- 4) To what extent have you embraced Zen meditation?
To what extent have you embraced centering?
To what extent have you embraced Zen breathing?
To what extent have you embraced letting go?
- 8) Tell me about your experience learning about oneness.
How do you use it in matches?
- 9) Tell me about your experience learning egoless ego.
How do you use it in matches?
- 10) What has your experience been learning effortless effort?
Have you felt effortless effort occurring in your matches?
- 11) Tell me about your experience learning empty mind.
Do you experience empty mind in your matches?
- 12) Tell me what you think about learning ma?
How do you use ma in matches?

Thank you for your time.

Appendix D – Zen Mental Training Guide

Zen must be experienced and cannot truly be understood through the intellectual transmission of ideas. The essence of Zen is that to experience awakened awareness, one must practice Zen meditation (zazen). Zazen provides the platform for the Zen mental strategy in sport, teaching the practitioner to think clearly of what is happening in each moment, without imposing thoughts. This creates the opportunity for inner stillness and teaches the tennis player, for example, to become more finely attuned to everything going on in the game. With heightened awareness, the tennis player increases the potential to be more perceptive of the opponent's subtle movements and intuitively know where to move in response. Therefore, inner stillness strengthens the athlete's ability to adjust to the opponent's movements, the speed and direction of the ball, and to make good tactical decisions.

In addition to teaching the participants to practice Zen meditation, the researcher will instruct them in a series of lessons about eight key concepts in Zen, which are relevant to tennis, and are those most commonly referred to in sport psychology literature that endorses the use of Eastern philosophy. These concepts are: centering, breathing, letting go, effortless effort, oneness, egoless, emptiness, ma. Learning these 8 concepts and Zen meditation will help to train the athletes to quiet their minds, increase awareness of their thoughts and action, and shift attention as needed. This section explains the merit of each concept, its relevance to tennis, and exercises designed to employ the concept.

Centering

“*Centered* means that body awareness is focused primarily in the center of the abdomen rather than, say, the head or shoulders and also that movement is initiated from the center” (Leonard & Murphy, 1995). Becoming aware of the body’s center point contributes to physical and mental balance, and promotes a calm attitude. From a calm center comes strength and resilience.

Zen Centering for Tennis

As tennis players, you want to be physically and mentally centered to play from a position of strength. A centered player is able to capitalize on opportunities presented during the game; where-as being off-center typically results in moving or thinking less than optimally. Frequent changes of serve create pressure situations that could lead to anxiety, but momentarily shifting your focus to the point just below the navel leads to a calm strong presence on the court. As a result, you will also convey confidence in your movements. Centering will help you to remain calm and play with strength.

Centering Exercises

Stand with your feet slightly wider than your shoulders, knees slightly bent, with your weight evenly distributed between toes and heels, sides of feet, and move the torso slightly front to back and side to side, until it feels balanced. With your shoulders neither hunched forward, nor pulled back, just draped over your ribcage, and your head nicely balanced over your shoulders, take a relaxing breath. Now lightly touch your center, one or two inches below the navel, and draw your attention there. Breathe into that place, feeling the calmness and strength.

In a stressful match situation (let's say it's set point for you or your opponent), there is a potential to give up control to your emotions, tighten your muscles, and make mental mistakes. However, by attending to your posture, taking a few easy breaths and bringing your hand to your center as a physical cue, you will feel a calm sense of strength and agility.

At the changeover, sit in your chair in relaxed, upright posture, letting your belly hang relaxed. Breathe into your belly, and slowly exhale. Now place your hand on your center, and notice that any unbalanced feelings are moving on, like a passing cloud. You feel confidence within.

Attention to Breathing

Attention to breathing refers to “putting our attention on something closely connected to the life energy of the body. Also, breathing is a very basic rhythm of the universe. When the mind is fastened to the rhythm of breathing, it tends to become absorbed and calm” (Gallwey, 1997, p.86). When breathing is natural it is easier to feel the situation is natural and therefore, one feels relaxed. Learning to become aware of whether we are breathing too hard or too little teaches us to be aware of feeling natural.

Zen Breathing for Tennis

One of the elements of centering is breathing naturally. Breathing naturally into the physical center point of your body will help you to play to your potential because as you breathe into your center, you will increase your ability to maintain a steady calm and use your strength as needed. In turn, this will allow you to feel in control of your game. Rhythm is also very important in tennis. In a relaxed state, it is much easier to move

naturally, without tension. You want to get to the ball, swing the racket and serve the way you do in practice. So, understanding that there is a natural rhythm to your breathing that connects to the natural rhythm of your playing is important.

Attention to Breathing Exercises

Sitting with good posture, with the spine straight and tall, shoulders relaxed, head straight, your chin slightly back, bring your attention to your breathing in and out. Just notice it without making any changes right away. Notice where the air seems to go – are you breathing into the top, middle or bottom portion of your lungs? Does your chest move up and down, or is there hardly any discernable movement? Is your diaphragm moving? Just become aware of yourself while you are breathing.

Take a moment to check your posture, making sure that you are sitting straight and relaxed. Sometimes we tighten the muscles around our shoulders or jaws when we do something new, so if you have tension anywhere, let that go. You can tighten your shoulders and then just let them drop. Now return to your breathing and observe the pleasant sensation that comes with the intake of air, and gently let it out slowly and completely. At the end of your exhale, let the body take in the next breath. Repeat this breathing for ten cycles, focusing more and more on a longer easy exhalation and a refreshing intake of air. Gradually focus the most on the exhalation, letting go of tension as you breathe out. Just breathing is enough.

Standing with good posture and relaxed shoulders, bring your hand to just below your navel and breathe in and exhale from that point. Hold your racket in front of you, and before your first back swing, bring your awareness to your center point and breathe

in and exhale, feeling calm and centered. Now take the racket back. Now from the forehand backswing position, step into the ball as it comes to you and breathe out from your center as you make contact with it. Repeat with the backhand swing. Inhale into your center, draw the racket back, and step into your backhand, exhaling on contact with the ball. With your serve, take the breath into your center and breathe out slowly, then proceed with your pre-serve routine maintaining your calm sense of confidence and relaxed breathing, continue with your toss, exhaling on impact.

Pair up with another person and stand facing each other about ten feet apart, making sure that you are both in an upright posture and relax into awareness of your breathing. Now one of you will expand your awareness to your partner, while continuing to breathe into your center. The partner will do five split steps with forehand swings, then five split steps with backhand swings. You will stay in your relaxed breathing mode while being highly aware of your partner's every movement. You are completely aware of her intentions. Continue to breathe naturally.

Walk to the service line, and imagine that you have the opportunity to break serve. While you know this, you simply inhale and slowly exhale, staying centered. It is enough to inhale and exhale. You feel calm, easy control. At the exhalation, you do your pre-serve routine, knowing that you do not have to do anything extra to serve to your potential.

Letting Go

“The thoughts themselves are not the problem; it’s our desperate clinging to them and our resistance to what’s actually happening that causes us so much anguish.”

(Jackson & Delehanty, 1995, p. 48)

Letting go is having the ability to remain detached from thoughts irrelevant to the task at hand. These can include expectation, fear, pride, and disappointment.

Detachment from irrelevant thoughts can help improve focus.

Letting Go in Tennis

Tennis is a fast-paced game with many breaks, requiring narrow and broad focus during play, and the ability to turn off irrelevant thoughts and maintain focus between points. The tennis player must be able to focus on the trajectory and pace of the ball, and the movement and force of the opponent, while paying attention to the opponent’s and one’s own strategy. Thinking about the last point, or the next point distracts from the current moment. Letting go mentally contributes to release of tension. The facial muscles of tennis players show tension: the eyes tense up, and the jaw tightens. When players tighten up, they don’t move their feet very well. Some players exhibit tension verbally, chastising themselves, yelling at officials. Next, they typically try harder, and their strokes lose their natural rhythm. The extra effort causes them to grip the racket tighter and force their shots, leading to more errors. Letting go of the unnecessary thoughts and tension allows tennis players to play their natural game. “The need to trust oneself and grow in understanding of our true selves will never diminish. The need to let

go of the lenses of positive or negative judgment of ourselves and others will always be the doorway to the possibility of clarity” (Gallwey, 1997, p. 117).

Judgment is often the cause of not thinking clearly or playing naturally.

Judgmental thoughts take you away from your best game. These thoughts might sound like, “Why did I hold back instead of going to the net?”, “I knew she was going to go that way, I should have covered the alley!”, “I’m playing out of my mind, I might win the tournament!”, “Oh dear...she has gotten in great shape, while I’ve been traveling on business.” Whatever judgmental thoughts come to you, for whatever reason, they are a misuse of your energy and prevent the clarity that you need to anticipate and react during the match. You will learn to pay attention to your thoughts and perhaps corresponding tension, and let go of good and bad thoughts and focus on your awareness in the moment.

The key is to let go of your expectations about yourself. Processing these thoughts takes away the spontaneity of your movements. Instead of acting as your own critic, allow yourself to be more child-like in your game. Lynch and Huang (Thinking body dancing mind, 1992) write that even when we are not playing as well as planned, we can relax, and go with the flow, increasing the likelihood of playing better and enjoying the process.

Exercises for Letting Go

First, practice letting go of physical tension by contrasting tension with relaxation. Standing up tall, with your arms loosely at your side, tighten all of the muscles in your feet by pushing your toes down as hard as you can. Now imagine trying to return serve with your feet so tight. Now relax the feet and notice the difference. Next, standing

relaxed, raise your shoulders about 1 inch and tighten your biceps and triceps as hard as you can. Notice what happens to your breathing. Imagine if you were about to serve like that...what would happen to your serve? Now, just let your shoulders go, draping nicely over your ribcage and take a deep breath, then let it go.

Sitting down. Letting go mentally is a skill that takes time to learn. Practice letting go in the moment when you typically feel anxious. That may be before the match begins, during warm-up volleys, before receiving serve from someone with a lot of power, or at break point. Whatever that moment is for you, take a second and imagine that you are in that situation. Use awareness of yourself to acknowledge any distracting thoughts or tension. The distracting thoughts are there, and then they just slip away as you shift your awareness to breathing in and out. Anxiety may creep back in for a moment, and you simply take notice of it, and let it fall away with your next breath.

On the court, during practice and matches, practice tuning in to your breathing during small breaks between play. As you do so, notice any thoughts that are extra (e.g., doubts, concerns, judgment, or perhaps a nagging injury), and as you breathe out relax your mouth and let the thought go. You may go back to those thoughts and resolve issues later at a better time. Right now, you are just playing tennis.

When you think about winning and losing, your focus is not on playing. Before or during a match, remind yourself, "No matter what the final outcome, my opponent is challenging me to play my best today." Letting go of outcomes allows you to enjoy the fun you are having. You can shift your focus from winning to feeling that your opponent provided you with an opportunity to give it your all.

Mushin

Mushin is a Zen term that means empty mind. In Zen, the term refers to being awakened to be your entire self. This can occur only when you are not already filled up with preconceived thoughts and attitudes. Mushin is being open to just being yourself doing what you are doing. It is not really being empty or devoid at all. In fact, in the moment of true emptiness, one realizes clearly exactly one's greatest potential.

Mushin in Tennis

Tennis is a dynamic sport, requiring total awareness and the ability to respond to the opponent's challenges. Emptiness provides the tennis player with mental clarity, which does many things. It promotes the ability to anticipate the competitor's movements, to know where the next shot is going to go, to have no thought between the toss and hitting the serve, and to be totally present in the game. Gallwey, the author of *Innner tennis* said, "If I stayed focused and relaxed, I could see even fast serves well enough to 'slow them down in time,' respond and pick up the ball just a split second after it bounced" (1997, p. 85).

Exercises for mushin

With a partner, take turns asking each other about something considered fun and relaxing, such as a vacation activity. Then go outside with your rackets and bounce a ball on the strings for 20 seconds. When you come back in, sit in a circle and take turns telling what you were thinking about while you were hitting the ball. Describe what it felt like at that moment.

With a partner, sit on the floor with bent knees, facing each other. One of you will place your feet on top of the other's feet. Clasp hands, and take turns slowly doing sit-ups. Inhale as you are going down, and exhale as you do the sit-up. Pay attention to feeling intention and then spontaneity.

Jog around the tennis court. As you do so, count out four strides as you breathe in, and 8 strides breathing out. Adjust the number if needed until you fall into a comfortable rhythm. Continue jogging lightly, feeling the rhythm of your pace.

Oneness

Non-duality, or oneness, is a resounding theme in Zen. It means that there is no separation between our thoughts and what we are doing. Intention and action are one. "Entering the Zen zone means becoming one with and inseparable from the essence of what you are doing during each moment you are actually doing it. It is being all here, totally present absorbing yourself in, connecting yourself to, and becoming one with your body, your task, nature, the tree you are looking at, the child you are playing with, the person you are talking with" (Orlick, 2000, p. 155.) To be otherwise, would be separate, disjointed and tentative.

Oneness in Tennis

Be one with your game. This begins with connection to our racket. Often, in tennis lessons, the instructor will tell beginners to think of the racket as extensions of their arms. This helps them to move the racket from the core, and keep the racket in proper alignment. When you play, visually and mentally connect with the ball on every bounce. With each hit, you hit the ball, and the ball hits you. As in ma – a pause or

space between things – broaden your awareness to include and feel one with the setting around you, your opponent, the umpire, any spectators. At this level of awareness, you observe and move in a natural rhythm on the tennis court, in the game.

Exercises for Oneness

Sitting, with eyes open, focus your awareness on your breathing. Now broaden your awareness to your entire body sitting here. Feel what it is like to breathe into your whole body, as though the air fills up every bit of you. On your next inhale, feel your energy expand outward, into the whole room. You are aware of your own energy, the environment, chairs, table, carpet, pillows – and the people sitting around with you. Nothing is separate. Your essence is connected and expansive!

With a partner on the court, hit 25 forehand to forehands, and 25 backhand to backhands, consecutively. When the ball bounces on either side of the net say, “bounce”, and whether you hit the ball or your partner hits the ball say, “hit”.

Egoless Attitude

In Zen, being egoless has to do with not separating the self from everything else. When the ego identifies with a particular behavior, there is a different relationship to people and objects, setting them as separate from the self. When the self feels connected to the court, the racket, and the opponent, the level of involvement increases, and thus concentration and focus are heightened. When the self is separate from one's performance, judgment kicks in.

Egoless Attitude in Tennis

“If your practice is good, you may become proud of it. What you do is good, but something more is added to it. Pride is extra. Right effort is to get rid of something extra” (S. Suzuki, p.59, 2002). Ego gets in the way of your best playing when you feel self-congratulatory. When a player hits an outstanding shot during a match, the ego sometimes tries hard to repeat the perfect thing that we just did, and we try too hard. In self-mastery, greater control comes by not trying to control the outcome and not trying to appease one’s ego.

Egoless Attitude Exercises

Stand facing a partner. One of you begins by stepping slowly to one side, then back, always moving slowly in different directions. The partner should mimic the movements as exactly as possible, staying synchronized as possible, like two dancers.

During a tennis practice, play a portion of the workout in complete silence. Instead of identifying, practice observing.

When you come to Zen training, practice humility by bowing at the entrance of the room. Use bowing throughout the session to indicate respect beyond yourself – respect for the environment, the members of the group, the teacher, and your involvement in a process.

Ma

Ma is a Japanese word that refers to a momentary pause, recognized as substantive space existing between events or between people. It can also be the break between points, or the window of time allowed at changeovers. “The critical time is

between points! After the last shot of a rally, the mind leaves its focus on the ball and is free to wander” (Gallwey, 1997, p. 85).

Ma in Tennis

Awareness of the space in time and space is crucial for the athlete to act at the right moment. Tennis players must respond to advances and retreats of the opponent, and simultaneously calculate one’s next shot. When a player goes to the net, the encroachment causes the opponent to adjust and respond to the challenge. Be aware of and respond to the changing space between yourself and your opponent, as though the two of you are one entity – the game itself. Responding with fear (judgmental thought) will only limit the focus needed by the player. Awareness of ma teaches you that you are connected to the space around you, and that the space is connected to your opponent, and this awareness will help you to capitalize when the moment is right. Temporal space can be used between changeovers and allows you to breathe, reset your mental focus, and give yourself mental cues as needed.

So after a point has ended and I’m returning to position or going to pick up a ball, I place my mind on my breathing. The second my mind starts wondering about whether I’m going to win or lose the match, I bring it gently back to my breath and relax in its natural and basic motion. In this way, by the time the next point is ready to start, I am able to be even more concentrated than I was in the midst of the previous one (Gallwey, 1997, p. 86).

Exercises for Ma

Learn to read your partner. Stand about 15-20 feet apart. Toss a tennis ball back and forth while focusing on breathing and establishing a rhythm. Then, the second the ball leaves your hands (ma), move your focus to your partner. Observe her breathing, watch her eyes, and notice her posture and the movement of body.

In the same exercise, see if you know when and where your partner is going to toss the ball by paying attention to her movement patterns.

Now, throw the ball beyond your partner, keeping the ball within her reach, by finding the opening.

On the court, maximize the space of time in changeovers. Clear your thoughts. Breathe in and slowly exhale, centering yourself.

Effortless Effort

Zen principles are often expressed in terms of what they are not. For example Gallwey wrote, “Letting it happen is not making it happen. It is not trying hard. It is not controlling your shots” (1974, p.35). Effortless Effort expressed in positive terms is simply about doing something such as playing tennis (effort) without doing anything extra (effortless). “The difference between the art of Zen and true Zen is that already you have true Zen without trying” (S. Suzuki, 2002, p. 104). This illustrates the nature of just being, or doing, or playing tennis – without trying.

Effortless Effort in Tennis

Power is a much sought after element in tennis. Serving powerfully and keeping the opponent behind the baseline are elements that strengthen a tennis game. Yet, many

players try too hard, and the result is a weaker serve, a misdirected passing shot, or perhaps an ill-timed overhead. When you think to yourself that you are really going to hit the ball hard and proceed in that effort, your muscles will tighten, changing the backswing and the natural follow through that you usually have. When this happens, the important point is to observe the tenseness and let it go. Another kind of effort might come in the form of concentration. It is not necessary to try to concentrate. S. Suzuki (2002) wrote, “without trying to concentrate our mind on anything, we are ready to concentrate on something” (p.103).

Exercises for Effortless Effort

The difference between letting it happen and making it happen can be demonstrated. Set up a tennis ball can near the baseline on the other side of the net. Now, if you try to hit the can by thinking of every detail of your stroke and then trying to hit the perfect shot, you will not hit it. However, if you take a few breaths, then ask your body to hit the can, see what happens.

While on the court, give your complete attention to everything going on in the space of your game, noticing that you are part of the whole. Focus only on the rhythm of your movements while being aware of the rhythm of your opponent.

Appendix E - Zen Meditation Training Guide

“To stop your mind does not mean to stop the activities of mind. It means your mind pervades your whole body. With your full mind you form the mudra in your hands” (S. Suzuki, 2002, p.41).

Meditation is more than mental and physical relaxation. It is a means of bringing no-thought into sharp focus, then using that clarity in everyday life...It is not a matter of shutting out or turning off one's thoughts, but of allowing them to “drop off by themselves” (Austin, p. 57).

First, a quiet room is recommended for the practice of Zen. Next, wear comfortable, loose clothing. To sit in Zazen, put down a two-inch mat and a thick pillow on top of that. One may chose to sit in either a full- or half-cross-legged position. In the full (lotus) position, one places the right foot on the left thigh and the left foot on the right thigh. In the half lotus position, only one foot is placed upon the other thigh. Next, rest your hands, palms up, in your lap, with the left fingers gently resting the right fingers, and thumbs lightly touching, to form an oval, or mudra.

The body must be maintained upright without leaning to either side or forward and backward. Align your ears and shoulders, nose and navel. Take a moment to rock from side to side and then front to back to find your center. Allow your weight to settle into the abdomen. Your eyes remain open, slightly lowered.

Begin to pay attention to your breathing. When you exhale, silently count “one”, and so on, up to ten, and then repeat. It is the exhale that is most important in Zen, as that

is when we let go of anything that we happen to cling to. If a thought arises, take note of it and then let it go. Sometimes it helps to say, “ah, thoughts”, or “hm, lists.” The length of meditation may vary. Twenty minutes per session is recommended initially.

At the end of meditation, I will clap twice. At that time, you may choose to place your palms together and bow as a symbol of respect, typically done in Zen meditation.