

...master the mental side of your sport

Visualization:

***The Master Skill In
Mental Training***



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VISUALIZATION

THE MASTER SKILL IN MENTAL TRAINING

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Photograph of triathlete (Barbie Bell) courtesy of Barbie Bell

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VISUALIZATION: AN OVERVIEW

Visualization is the art and skill of creating a mental model of an event or situation. It is controlled, directed, and purposeful. Visualization is so important in mental training that some athletes regard it as synonymous with mental preparation. Indeed, many sports psychologists consider visualization as the master skill in mental training.

Visualization is a natural, common mental behavior, particularly as a response to challenging events. However, peak performers visualize more and better than do others. They may have learned spontaneously to visualize events in vivid detail. Others can learn to visualize the way peak performers do. The athlete who hones the basic skills for visualization and consistently applies them is assured of enhanced performance.

The information on visualization is presented in three main sections. Examples of top athletes who are proficient visualizers show how they use visualization to improve their performances. Also basic exercises for learning the fundamentals of visualization are described. Finally, exercises and instructions are given for three major applications of visualization to sports: problem solving, attitudinal training, and mental rehearsal.

Every athlete has experienced having a complex move or a correction in a routine "click in" after seeing the action in a detailed and graphic picture in the mind's eye. This experience can be made to happen by applying the skill of imagination and imaging.

First, consider the profound impact that visualizing events can have. Do you remember the classic fright scene in Alfred Hitchcock's movie, Psycho? If you saw the movie, you no doubt can still relive how you reacted when Janet Leigh was stabbed to death in the shower. Does just thinking about it or picturing it in your mind cause you to tense up? Did you know that thousands of people reported being unable to take a shower after they saw that movie unless someone else was home?

When people saw the movie in the theater for the first time they jumped or screamed or cried or ran out of the theatre because it was portrayed so vividly that their minds reacted to it as though it were real. The stabbing was dramatized so realistically in pictures that it had a dramatic effect on viewers for years to come.

If a movie producer can cause such an intense reaction in our minds, think about the power we have over our own minds. Thoughts and mental images control the body. The Russians have a proverb that says, "The brain is capable of holding a conversation with the body that ends in death."

What kind of conversation are you holding with your body? Is your brain sending out positive signals that direct your athletic performance to its optimal level? If you are like thousands of other athletes who are striving for better performance, you may be ignoring the mental power of visualization that can be recruited to further your athletic goals.

ATHLETES WHO VISUALIZE

One of the characteristics that separates peak performers from others is the use of visualization. Examples of peak performers in sports who use visualization abound. An excellent example is Jack Nicklaus, who has used this skill throughout his career in golf. Before he hits a golf ball, whether in practice or in competition, Nicklaus mentally rehearses the shot in detail. He pictures the address of the ball, the swing, the trajectory of the flight of the ball, the landing, the roll of the ball, and the final lay of the ball. Interestingly, he then backs up the action and sees it occur in reverse, like a slow rewind of a video tape.

Many peak performers see the desired actions and outcomes over and over in their minds. In the 1984 Summer Games, it was evident that U.S. high jumper Dwight Stones used visualization. He studied the bar intently, then he took several approach steps and executed a simulation of the type of kick step he regularly used for the jump. On a couple of occasions, Dwight was almost disqualified for a jump, because he nearly passed the allowed time. He went over the sequence of moves in his mind until he saw himself making the jump exactly the way he wanted to do it. Only then did he proceed.

Many athletes who use visualization to prepare for competition discover it spontaneously. In the early 1950's, ex-Celtic center Bill Russell discovered the benefits of mentally previewing defensive moves on the court. At eighteen, Russell traveled by bus throughout the Northeast with basketball players from California. On these long

rides from one small town to another, Russell visualized his defensive responses to the offensive plays of centers he would be opposing. The mental practice paid off. On the court Russell was exceptionally effective at blocking shots. He responded with defensive plays exactly as he had pictured in his mind. "It seemed natural, almost as if I were stepping into a film and following the signs. I was so elated I thought I'd float right out of the gym" (Maggitti, 1984).

Another believer in visualization is Marilyn King, a former Olympic pentathlete. According to King, "The pictures in our minds have power. They're not just passing through" (Nelson, 1984).

To achieve the power that vivid imaging can have, one must learn visualization skills, and how and when to apply these skills. An athlete who makes visualization work as a powerful mental tool is Barbie Bell, a triathlete, who has been ranked sixth in the country by the Association of Professional Triathletes (APT). Bell's visualization practices make a decided difference in her performance in triathlons because she incorporates characteristics that separate skillful visualization from ordinary daydreaming.

As a preparatory step to visualizing a race, Barbie imagines herself in a room, which represents a special place of relaxation. (All information on Barbie Bell is from an interview with her, October, 1985.) In this "mental room," Barbie imagines a video screen. She pictures herself seated comfortably in the room, facing the screen. She projects the visualization of herself competing in each phase of the race onto the screen. It is as though she plays a mental video tape of her performance in the upcoming event. On her own "internal video tapes," she sees herself performing with characteristics that assure her top performance. For Barbie, one characteristic associated with best performance is feeling light. As Barbie describes it, "When I'm running I want my arms to feel very, very light. I want my whole body to feel light. I visualize myself running about six inches off the ground, so that I don't feel the pounding. Both the idea and the feeling are like floating. I actually see myself floating as I run.

"It's similar with swimming. In the visualization, I think light. I see and feel myself floating on top of the water as I swim. The air I breathe in lightens me. I'm out there floating as I swim. It's like being an astronaut in space, with no gravity effect on

the body. The feeling of lightness with both swimming and running helps to make them effortless."

Whether it is Barbie Bell previewing herself in a triathlon or Jack Nicklaus picturing himself hitting a drive from the first tee or Dwight Stones visualizing himself clearing a high jump in perfect form, all of these visualizations have a number of characteristics in common. These common aspects can become guidelines for others to follow. In this way, anyone can learn or be taught to develop visualization as a powerful tool in sports by using it in the effective way that peak performers do.

BASIC INFORMATION ABOUT VISUALIZATION

How Visualization Works

The skill of visualization involves directing a series of thoughts and images into a meaningful sequence (Harris and Harris, 1984). Initially, people differ greatly in their ability to visualize. Remember that visualization is a learnable skill. Therefore, no matter where an athlete starts in the ability to visualize, consistent practice increases proficiency.

Why visualization works to increase performance is not completely understood, but some of the elements involved are known. One part of the explanation is that the body cannot distinguish between an event which is experienced and one which is vividly imagined. The negative effects of this phenomenon occur with chronic stress and its sequel, stress-related illness. Whether an individual is facing a life-jeopardizing threat, such as an attack by a person, or imagining what his boss might say to him because he failed in an important deal, he may experience the same set of physiological stress responses.

This relationship between vividly imagining or visualizing an event and the physiological reaction is being studied and used in athletics. The Elite Athlete Project at the Olympic Training Center in Colorado Springs, Colorado, is examining what makes an athlete an elite athlete, which is defined as the top several competitors nationally in a sport. In one study conducted by the Project, top-ranked downhill skiers visualized a

specific course on which they had competed. While the skiers pictured themselves going down the course, electrodes on their legs monitored muscle activity. The muscle activity recorded on the skiers corresponded to the muscles that would be engaged turn by turn down the course (Teichand and Dodeles, 1987).

We cannot think or imagine without some level of physical response occurring. In visualization, thoughts and images lead to neurological patterns, which in turn, lead to muscular responses. With the repetition of a sequence of thoughts and images, in other words a visualization, the associated neurological pattern is strengthened and the responses that are imagined have a higher probability of occurring in the actual situation. It is as though by visualization a neurological blueprint or template is created. With visualization practice, the template is being traced and retraced, making it more indelible and more clearly defined. The stronger the neurological pattern associated with the visualization, the more likely that it will be activated in the actual situation. Therefore, there is a greater probability of performance outcomes that have been visualized.

How to Construct Visualizations

There is a vast difference between visualization and daydreaming. Visualization is focused mental work that sharpens the real skills being viewed. A set of characteristics, which, if followed, act as guidelines for constructing visualizations which are powerful mental tools for the athlete.

First, see the action precisely and in detail. An excellent example of this characteristic involves a Chinese pianist who was taken prisoner during the Cultural Revolution. He remained imprisoned for seven years. Only a couple of months after his release, he accepted an invitation to play at a piano recital. At the recital, those who knew of his imprisonment were astonished at his being able to play as well as he had ever played. When asked how he was able to play at his former level of virtuosity after long imprisonment, he responded by saying that he practiced every day in his mind (Hunt, 1982). This story underscores the idea that doing visualization properly requires seeing, and, in a sense, internally experiencing each aspect of the desired actions and the desired outcomes precisely and in detail.

Vividness and precision in visualizations create a physical sensation in the body. Barbie Bell's visualizations are a good example of this effect. Barbie can almost feel herself swimming as she graphically pictures it. This kinesthetic or "feeling" component of the visualization is of vital importance. Feeling and sensing the experience as it is being pictured signify that the muscles and nervous system are being strongly imprinted by the visualization. As in the movie, *Psycho*, when the visualization is effective, the body responds. Barbie's visualizations, as shown by her description of a swimming stroke, are so graphic that it is nearly like being there, doing the activity.

"For the actual technique side of the swim, I picture myself with my hands in the water, my fingers close together. Even though there is not much resistance, I picture myself putting my hand into the water way out in front of me and grabbing the water and pushing it behind me. This picture of my grabbing the water and moving my hand through an 'S' shaped movement to push the water behind me, is so clear I can feel it while I am seeing it."

Visualization is different from internal narration or dialogue. Although words and thoughts can help to focus images, in visualization use mental images, not thoughts. Images or pictures are the primary content of visualizations because words cannot be generated at a fast enough rate to describe events as they occur (Harris and Harris, 1984).

For effective visualizations, include the whole task from beginning to end. Many athletes assume that viewing the beginning means starting the visualization at the starting line. Because of the importance of the athlete's pre-race state, action should be backed up to an earlier point. Another good example is provided by Barbie Bell.

In her pre-race visualization, Barbie sees herself going through all of the equipment checks and preparatory steps she will actually do prior to the race. By starting her visualization practice at these preparation stages of the race, Barbie fulfills one of the rules for visualizing effectively, namely, seeing the upcoming event in a complete way from beginning to end. As Barbie describes it, "I visualize myself the morning of the race pumping up the tires on my bike, because that is probably the first thing I do. I visualize myself checking the numbers on my bike to make sure they are on securely. Then, I see myself walking through the next steps in preparing for the race: taking my equipment bag to the station, setting up my transition area, placing the bike exactly where

I want it, setting out my shoes on the towel and making sure they are ready to go with the quick-release laces.



Barbie Bell's finish in first place in the swim leg helped to make her the victor in the King of the Hill Triathlon, Big Bear Lake, California.

"After I have my bags, my bike, and my equipment ready, I visualize myself taking off my sweats, stretching out, and moving into my pre-race state. The pre-race state may be one of the most important elements for my performance, so I concentrate on that very specifically. I see myself start to focus in on myself, so that I forget about the other competitors around me. I visualize myself in a state of total awareness and deep concentration.

"Besides this condition of total focus, the ideal pre-race state has certain energy requirements. I see myself with the adrenaline about ready to go off. The energy part is a key element in competing. I see myself psyched up, having the fight, drive, and will to win the race.

"Another key element that I always visualize with clarity is the start [of a swim race]. I see myself walking to the grassy area near the start. I see other swimmers walking toward the water. I see myself in that quality state as I go to the start. I ignore all the other competitors. It's as though I am in a capsule by myself.

"The instant the gun goes off, I explode into action. It's as though all of those energies have been caged. At the moment the gun goes off, they are released."

This characteristic of seeing the complete cycle of competitive activity from beginning to end means that the desired final outcomes are visualized. For a runner, this might include passing a competitor toward the end, then finishing the race as a winner, with arms up breaking the tape. It might be a scene of crossing the finish line with the race clock reading a desired finish time.

A corollary to visualizing the desired final outcome, is to include and focus on desired outcomes that will occur during the competition. For a runner, this could mean visualizing running segments of a race in aimed-for time splits. Desired outcomes during the course of a competition can also include mental/emotional states, positioning in a group of competitors, and a variety of other desired results.

Barbie Bell describes one outcome that she feels is essential for her during the swimming phase of a triathlon-staying emotionally calm and cool, in spite of the mayhem that occurs including getting hit by other swimmers. "In most races the swim phase is chaos and confusion. There is a lot of splashing and a lot of elbows flying around. Many times you will get hit. You've got to be able to say, 'OK, I got hit in the head. Fine. I've got to go on.' I've gotten kicked in the stomach. I've gotten swum on top of by some guy who thinks he is real fast. In the visualization, I see myself dealing efficiently and coolly with this. It's a madhouse out there with all the swimmers. You've got to understand the kind of confusion that could happen. I need to prepare mentally for this, so that when it does happen, I know exactly how to go through it. In spite of

anything, I stay cool and controlled. I never allow myself to flare up, because that is only a detraction from my performance."

Another example from Barbie of a desired outcome during the competition relates to positioning in the pack of swimmers and swimming the course in a direct, efficient way. "One thing that is a must for me to keep in mind during the race and to rehearse well before the race is positioning. I always position myself to the extreme right or left of the pack. From my position, I find the closest, most direct line to the turnaround point. It is very simple, but you would be surprised at how many swimmers go with the pack, even when the pack follows an inefficient route in the water."

One efficient way for athletes to arrive at what is important to emphasize in visualizations, in terms of intermediate outcomes during a competition, is to ask themselves some questions, such as, "What is my tactical strategy for the different stages of this competition?" and, "What is the mental/emotional state that I want to maintain in the different phases of this competition (or perhaps throughout the competition)?"

Another guideline for visualizations is to picture the events happening at the same rate or tempo as they do in the actual situation. An exception to this rule occurs when an individual is first learning a skill, in which case, the visualization should be slower than the actual event. For example, slowed-down tempo for mental rehearsal is useful when an athlete is first learning a skill, such as a complex platform dive or a correct golf swing. Generally, however, for the athlete picturing sports situations, the rate of occurrence in the visualizations should match the pace of real-life events (Harris and Harris, 1984).

Also, include environmental detail in the visualizations. The athlete needs to visualize the whole context in which the performance occurs. In pre-race visualizations, the runner should see the other runners, the track, the stadium, and the spectators. .

In part, environmental detail comes from including information from other sensory channels besides the visual. Although the term "visualization" makes it seem as though there is only visual information, any visualization has greater impact when auditory, kinesthetic, and olfactory information are added to the visual. The task or scene that is visualized should be as close to the actual situation as possible. Using a multi-sensory channel visualization is like programming information on several different tracks

simultaneously. The outcome from multi-sensory information is a powerful, high-impact visualization.

Relaxation plays a vital role in visualizing effectively. Therefore, move into a relaxed state to begin your visualizations. Top achievers prepare themselves with facts, figures, knowledge, and skills. But they also prepare their psyche to achieve mental readiness. The Soviets call this skill PSR or psychic self-regulation. It is a regimen of mental imagery and deep relaxation. The Soviets have learned that when a person is in a state of profound relaxation, the brain and central nervous system cannot distinguish between a deeply imprinted image and the actual, physical event. Therefore, when visualization practices are preceded with relaxation, effectiveness of the visualization increases. In states of deep relaxation, the visualized task or performance is more deeply imprinted on the athlete's mind, because there is more coherent focus on the mental imagery, and because the mind is more receptive and suggestible to these images in states of calm and relaxation.

Each of these seven guidelines for constructing visualizations plays a role in transforming ordinary daydreaming into a serious mental workout that enhances performance. When you have decided on the content for a visualization, make a mental checklist of each of these characteristics, and consciously shape or specify the visualization to include each of these recommended guidelines:

- Use vivid detail and precision
- Use primarily images rather than thoughts
- Visualize the whole task from beginning to end
- Include desired outcomes including intermediate ones
- Use tempo of the actual situation
- Include environmental detail
- Precede the visualization with relaxation

When to Use Visualization

Probably the most practiced and the most well-known use of visualization is in preparing for an important upcoming event by mentally rehearsing the event. Problem

solving and attitudinal training are the two other major applications of visualization to sports. We describe these uses in detail later.

Secondary uses of visualization include visualizing a correction immediately after making an error. This re-programs negative expectations caused by the error, and erases some of the impact of the error. For the same reason, it is helpful to visualize the correct sequence and the desired outcome after seeing someone else make an error.

Another situation in which visualization is extremely useful, but often overlooked, follows experiencing success. By re-experiencing a successful situation through visualization, that experience is more strongly locked into memory, thus increasing the likelihood of repeating that experience or a similar success experience. Reviewing successful experiences as soon as they occur builds a personal history of success, which produces positive effects in confidence and self-esteem.

Another use of visualization concerns the imaging of performance skills while injured. This could become a standard adjunctive form of therapy for injured athletes. Anyone who has worked with athletes, and certainly athletes themselves, know the psychological toll that accompanies sustaining an injury. I have seen athletes so demoralized during periods of injury that they become clinically depressed. To be sidelined for two, four, or six weeks may not sound that serious, but for some athletes, even brief periods of non-participation in their sport are devastating. Using visualization during periods of injury not only diminishes the psychological impact of injury, it assists the athlete in staying practiced in the skills of a sport. Remember the story of the Chinese pianist, who after seven years of imprisonment was able to play at his usual level of virtuosity only a few months after his release. He kept up his skills by visualization. The injured athlete can buffer the psychological impact of injury, can sharpen and practice performance skills, and can make a smoother transition back into the sport, all by visualization.

BASIC EXERCISES IN VISUALIZATION

A beginning tennis player needs to learn the physical fundamentals of the game, the serve, the lob, forehand and backhand strokes, overhead, net volley, crosscourt

backhand and forehand shots, as well as the basic rules and some strategy. Effective learning with mental skills follows a similar course. An athlete starting visualization practices does best to begin with component skills. Basic skills for visualization consist of creating and controlling colors, experiencing other than visual information (i.e., auditory, kinesthetic, olfactory), achieving accuracy and vividness with imaging objects and environments, controlling movement of images, sustaining images, and creating special mental sets in which visualization exercises can be practiced. Once there is proficiency in the basic skills of visualization, complex uses of visualization, such as previewing a meet or tournament performance, can be done with much more effectiveness.

The extent to which visualization enhances performance depends upon the accuracy and vividness and control in the visualization. In other words, how skillfully the visualization is done. The more an athlete practices, the more effective visualizations can be in improving athletic performance. The following exercises for component skills are meant to be suggestive, in the sense of presenting a general idea for exercises for each skill. Virtually endless variations can be created to alter the practices for age levels or for greater variety.

Colors

I first learned about the use of these exercises when I went to a judo studio in Phoenix to talk with judo players. I was preparing a training program for a judo team, so I decided to ask some local judo athletes about mental issues or concerns specific to judo players. An older athlete in the class said that for him concentration was the key in this sport, which he viewed as a live, fast-moving chess game, with attacks and counterattacks, both feigned and real, which demanded total presence and split-second timing. He explained that a Japanese coach he had studied with nearly twenty years earlier used a series of mental exercises at the beginning of each session to assist the players in developing full attention or concentration. Central to these practices were the color exercises described below.

Exercise 1.

With eyes closed imagine a dot of red color on the horizon. Continue to visualize it until the color is bright red and the dot is steady, well-formed and motionless. Move the dot forward slowly. Keep correct optical perspective, so that the dot increases in size appropriately as it moves toward you. Make sure that you are able to control the rate of speed at which the dot moves. Test your control by altering the rate of movement of the color dot. Continue to move the dot toward you until it covers your entire visual field. Reverse the process, making the red recede until it becomes a tiny dot on the horizon.

Exercise 2.

Repeat Exercise I several times using different dots of different colors each time.

Exercise 3.

Repeat Exercise 1 twice, with the variations of seeing the dot originally at the extreme left, then at the extreme right, of your peripheral vision.

Exercise 4.

Repeat Exercise 1 with your eyes open.

These simple exercises, if they are done with accuracy and precision, require mental focus, which creates a secondary gain when they are executed prior to a physical practice session or workout. When done daily, or at least several times a week, progress in accuracy and control with visualization is made.

Other Sensory Tracks Besides the Visual

Even the basic visualization exercises can be fun and interesting. This is especially true for the exercises related to experiencing touch, taste, and smell through imagery. Adding these other sensorial qualities to visualizations enlivens the imagery and increases the "programming" effect on the visualizer.

Exercise 1.

Pick up an orange. Examine it carefully. Note the feel of the skin. Make a mental note that describes the texture of the peel. Set the orange down.

In your mind's eye, see the same orange. Imagine picking it up. Mentally describe the texture of the peel. Examine it carefully. Turn it over in your hand. Imagine yourself setting the orange down on a small cutting board. With a knife, cut out a wedge

of the orange. With your fingers feel the differences in texture among the peel, the white skin under the peel, and the pulp of the orange. Cut out another wedge and take a bite of this section. Focus on both the taste and the smell of the orange as you imagine yourself biting into the section of orange.

Exercise 2.

Repeat Exercise 1 with several other foods, such as lemons, grapefruit, peaches, chocolate mousse.

Exercise 3.

Examine an ordinary No. 2 lead pencil carefully. Notice the lead, the wood-like composition just under the colored finish on the surface, the gold-printed words on the side, the metal band at the end of the pencil, and the red eraser.

Set the pencil down and close your eyes. In your mind's eye, imagine the pencil you have just looked at. Increase its size. At first make it about ten times its usual size. Then, increase the size substantially beyond that by making the circumference of the pencil approximately the size of a barrel. After you have increased the pencil to that size, examine it again carefully. Touch the pencil. Note the feel of the finish and the contours of the pencil. Again increase the size of the pencil. This time make it as large as an average size room. View it in this enlarged state from a close-up position. Then, blow up the size of the pencil again. For this final time, increase the size of the pencil to the size of an airplane hangar.

Once your mind has created this image, walk up to the pencil and find a doorway that allows you to walk inside the pencil. Once you are inside the pencil, find a corridor that extends across the width of the pencil. Walk toward the other side of the pencil. Between the place where you entered and the opposite side, you pass through each of the different materials from which the pencil is constructed: the graphite, the wooden material surrounding the graphite, the outer finish. Carefully examine the graphite. Focus on the texture of the graphite. Put your hand out and feel the graphite. Describe to yourself exactly how the graphite feels. Make a mental note that summarizes the kinesthetic sense of graphite. Go through the same steps with the wooden material surrounding the graphite and the outer finish on the pencil.

Exercise 4.

Select other objects and follow the same procedure that was done with the pencil. Other interesting objects to examine with the focus on the tactile sense are stones, crystals, and flowers.

The more the physical response approximates the response that would occur to the actual experience, the more skillful and accurate the visualization. Athletes can evaluate their progress in visualization skills by comparing the response to a visualization with the response to the actual event. For example, in an exercise for developing other sensory tracks of information besides the visual, you might imagine biting into a slice of lemon. Then, take actual bites into a wedge of lemon. What are the places in the visualization that fall short, that make the visualization experience pale compared to the real experience? With increased practice in visualization, the gap between the real experience and the model created in the visualization narrows. The closer the simulated model of the visualization is to the experience, the truer the response to the model. For example, when imagining biting into a lemon, if your mouth puckers, your visualization skills are beginning to show signs that they can influence your sports performance.

Familiar Objects and Environments

One of the requisite characteristics for powerful visualizations, accuracy in imaging, is seeing objects and environments in detail. There are countless ways to practice vivifying imagery by including detail. The following exercises are suggestive ones for learning to make visualizations graphic by seeing specific objects and whole environments in detail.

Exercise 1.

Choose a familiar object from your sport. For a tennis player, this might be a tennis racket, for a basketball player, a basketball, etc.

In your mind's eye, see your tennis racket on a table in front of you. Examine each part of the racket, the grip, the neck, the head, the strings. See if you can read the writing on the handle. Notice the way the strings are joined to the racket head. Look carefully at the leather grip on the handle to notice how it is worn. Pick up the racket. Notice in detail how it feels in relation to the kinesthetic sense of the grip, the weight and

balance of the racket. Bounce a tennis ball at waist height. Contact it with a forehand swing. Experience in detail the feel of your arm as it follows the motion of the forehand. Hear the sound of the racket contacting the ball.

Exercise 2.

Choose a room that you know well. Imagine yourself entering that room. Notice the doorway, the casing, the door, and the doorknob. As you walk through the doorway, get a sharp, clear picture of the whole room as it would look from that entrance. Add more detail to this general picture of the whole room. Be sure to include all of the large pieces of furniture. Then, add further details, such as the pillows on the sofa, the plants on the tables, the pictures on the walls. Sit in your favorite place in the room. Notice exactly how this chair or couch or bed feels. Picture the whole view of the room from this perspective where you are seated. Turn to your left and examine everything that is in view on that side of the room. Move your eyes slowly over that side of the room so that you do a slow scan from left to right. Increase the level of detail in your perception. See not only the general outline of furniture and other objects, but the small detail on them as well. See the knobs or handles on any dressers or cabinets. Notice the colors and the patterns on any drapes or curtains. Turn to your right and do the same slow scan from left to right. Notice in detail all of the objects on that wall or side of the room. Look up at the ceiling. See it as vividly as you can. Direct your eyes to the floor. Examine the carpet or tile. Reach down and touch the floor. Notice the texture. Stand and walk to one of the lamps in the room. Turn the lamp on. Notice the change in brightness in the room. Then turn the lamp off. Put your hand out and feel the texture of the shade, the switch, and the base of the lamp. Hear all of the sounds that are a usual part of this environment. Leave through the same doorway as you entered.

Exercise 3.

Imagine a sports environment, such as a stadium, a skating rink, tennis courts, or a track, with which you are familiar. Use a similar level of environmental detail as you did in Exercise 2 and imagine yourself in that environment practicing your sport.

Movement

Athletes do not always have the luxury of visualizing while seated comfortably in a serene environment with relaxing music playing in the background. Practice of visualization skills both in special relaxing environments and in the athlete's sport environment yields the best results. The athlete needs to practice visualization while in action. This may include visualizations during practice sessions and during competitions. However, it always includes movement.

The exercises suggested below allow the athlete to gain experience in creating and maintaining an image while in motion. Even at the beginning stages of visualizing while in motion, athletes experience a direct effect of the visualization on the quality of the actions they perform. Because of this, these exercises, in addition to training athletes in a component skill of visualization, act as strong persuaders for the efficacy of visualization to enhance performance.

Exercise 1.

While running or jogging, visualize a blank screen. Make it neutral in color. Stabilize the image so that it does not waver or fade. Often, while running, athletes can be flooded with ideas or poignant past memories, as in *The Loneliness of the Long Distance Runner*. This preliminary step helps to clear or empty the mind. See if you can maintain this neutral image for five minutes.

Once you are able to maintain the neutral image, you are ready for step two. Imagine the phrase, "My legs are tired and heavy" printed on the screen. Continue to read the phrase slowly from the screen for several minutes. At the end of that time, make a mental note of any changes you experience in your body.

Exercise 2.

While running or jogging, create the image of the blank screen in your mind's eye. Hold the image for several minutes. If any thoughts or images come to mind do not focus on them. Let them go immediately and turn your attention back to the neutral screen. See the word, "glide" on the screen. Mentally repeat "glide," as you focus on the word on the screen. Continue picturing the word and mentally repeating it while you are running.

Next, replace the word, glide, with an image that represents the meaning of the word. You might choose a gliding bird, a sea gull or a hawk, gliding effortlessly on a wind vector. Focus completely on this image on the screen. Make the image as clear and graphic as possible.

In the third step for this exercise, continue to see the image of the gliding bird on the screen, only add the word glide under the image. Focus your attention on the image and the word as you mentally repeat, "glide." If any extraneous thoughts or images come to mind, let them go and immediately return your full attention to the image and the word on the screen. After several minutes, make a mental note of the effects of this visualization on your jogging or running.

Exercise 3.

Repeat Exercise 2 with a variety of words, such as, "soar," "slide," "rocket," or phrases, such as "faster and faster," "swift as the wind." With each variation note the effects on your jogging or running.

Projecting and Sustaining an Image: Yantra Exercise

The images in a visualization are intentionally created by an individual. At first they are experienced as internal phenomena, meaning that they are felt to be "in the head" of the visualizer. With systematic and consistent practice over time, visualizations become sharper, more detailed, more accurate, truer to the real-life phenomena being imaged. Part of this increasing realness is due to a learned ability on the part of the visualizer to project images onto or into the environment. This means that there is a sense in which the images appear "out there" in the environment as opposed to existing strictly inside one's head.

In learning to project images onto the environment, the practitioner is learning to minimize the distinction between the real and the imagined. The subjective or imagined can be created by the visualizer to be so real that it has the same status as the objective. At least that is the ideal that is aimed for. The more closely a visualization approaches the real, the greater the impact of the visualization.

Theoretically, at the furthest level of skill development, visualization of skills would create a model simulating physical training so closely that the results produced by

the model would be virtually identical with the results from physical training. To begin the process of learning the component skill of projecting and sustaining an image, try the following exercises.

Exercise 1.

Create a yantra or visual design by cutting out a piece of black poster board twelve inches square. In the middle of this black square glue a small white two-inch square of poster board. This exercise has been described by Dorothy and Bette Harris in their book, *An Athlete's Guide to Sports Psychology* (1984) as an exercise for developing concentration skills.

Place the yantra at eye level for a seated position and at a distance of not more than ten feet away. Place it against a wall that is white or neutral in color. Begin the exercise by moving into a relaxed state by taking ten slow, deep breaths. With eyes closed, imagine a blank screen, like the screen on which slides are shown. Once you have pictured the screen clearly, color the screen black. Continue to focus on the screen until you can see the black screen as a steady, clear image.

Open your eyes and focus on the small white square. As you look at the white square, assume a passive attitude. Look receptively, without expectations or effort at the white square. Before long, you will see a ring of colors around the white square. When this happens, move your line of vision up and to the right of the yantra, so that you are focused on them all at that location. You will see an afterimage of the yantra. Often the afterimage will appear in reverse colors of the original image; i.e., a larger white square with a small black square in the middle of it.

Gaze at the afterimage until it fades. See how long you can maintain it.

Exercise 2.

Repeat the first exercise except for the final step. When the afterimage begins to fade, imagine that it is still there. Fill in the faded areas with your imagination. See how long you can maintain the projected image.

Exercise 3.

Repeat the first exercise with another variation in the final step. When the afterimage completely fades, close your eyes and imagine it as clearly and sharply as you can. Then, open your eyes and project the mental picture of the afterimage on the wall

next to the yantra. Sustain the image for as long as you can. Repeat the step of re-creating the afterimage, first internally in your mind's eye, then externally by projecting it on the wall.

Mental Studio: A Tool for Visualization

Visualizations done while the visualizer is relaxed yield the most powerful results. Advice given to Nicole Shapiro highlights this principle. The career of Nicole Shapiro, corporate executive turned business consultant, proceeded at rocket pace. She arrived in this country as an immigrant at the age of sixteen, not knowing how to speak English. Before the age of thirty-two, she became the vice-president of a major corporation. Once, in the early stages of her career, Nicole asked her mentor what she needed to do to become successful. Much to her amazement he replied, 'You need to learn to lie and steal.' Because Nicole perceived this man as having impeccable integrity, she was astounded at his advice. Then he explained to her that he meant she should steal some time each day and lie down for a few minutes in a state of physical relaxation to review her plans, objectives, and goals.

The mental studio technique teaches you how to enter a state of deep relaxation so you can program yourself to become more successful. Creating a mental studio induces the most effective mental environment in which to do visualization practices. In addition, doing exercises in the same mental environment builds an association between that mental set and the exercises. This association enhances the practitioner's readiness, focus, and rate of advancement in developing visualization skills.

Essentially, the technique of the mental studio involves imagining a "place," such as a house, cabin or retreat, or a location, such as a meadow or beach. This place may be real or it may be purely a creation of imagination. The most important characteristic of the mental studio is that for you it represents a special place and a perfect place of peace and relaxation. The mental studio exercise can be done while you are either in a lying down or a seated position. However, it should always be done alone. Take some steps, such as locking a door, putting up a "Do Not Disturb" sign, or turning on a phone answering machine to ensure that you will remain uninterrupted during the exercise.

Although in the beginning the technique may take longer, after you know the steps and have done it a few times, allow approximately fifteen minutes for the exercise.

To create a mental studio, the athlete starts out by using a physical relaxation technique, either progressive relaxation or a breathing technique. Relaxation is an important enhancement factor for the exercise. If necessary, the relaxation step can be shortened by taking several slow, deep breaths, then doing the relaxation cue.

The relaxation cue we recommend consists of holding a deep breath and, simultaneously, holding tension in the non-dominant hand for approximately five seconds. After that time, the practitioner releases tension in the hand and exhales completely. After this dual cue has been done repeatedly, while the athlete is deeply relaxed (subsequent to a relaxation method) by generalization, it becomes a relaxation cue, capable of eliciting a relaxation response. Whenever an athlete desires to enter a state of greater relaxation, he or she only needs to use the cue, rather than going through one of the relaxation exercises, such as progressive relaxation.

In the second step, called a "countdown," the practitioner counts down from ten to one in order to deepen the relaxation state. During the countdown, the visualizer imagines riding an elevator down to deeper levels with each number that is counted.

The desired outcome from the countdown is a state of deep physical and mental relaxation. This result is best accomplished if the practitioner focuses on letting go and allowing the experience to happen. Athletes, especially, are geared in the direction of hard, conscious, effort and striving. For best results with this method, an opposite orientation is required. Not trying, letting go, and allowing are the keys to making the countdown effective. The feeling is like the letting go experienced when sliding down a slide in a play-ground. It is in counter-distinction to the striving, full-effort feeling of making a strenuous climb on a mountain.

In the third step, the practitioner pictures the studio and the environment surrounding the studio. There are few rules in the creation process for this setting. However, two guidelines should be kept in mind'. Make the mental studio a place that represents a perfect spot for relaxation and renewal, and view both the internal and external environments in detail. Other than these considerations, the studio, the decor,

and the surrounding environment are pictured exactly the way the visualizer wants them to be.

Finally, the visualizer adds three items to the studio that enhance the opportunity to create powerful changes in thinking and behavior. One item is a video screen. The second is a blackboard. And the third is an energy machine. The specific instructions, which follow, can be used to make an audiocassette tape on creating a mental studio. Or the athlete may choose to make an internal tape. Either way, by reviewing the tape a number of times, the mental studio becomes a familiar, fixed space, which operates as a platform for visualization exercises.

Specific Instructions.

Step 1. Relaxation. Sit or lie down in a comfortable position. Take a couple of deep breaths. Let your eyes fall gently closed. Do a progressive relaxation exercise.

Step 2. Countdown. In your mind's eye, see yourself standing in front of an elevator. Project yourself into the picture so that you experience yourself standing facing an elevator. Press the "down" button, so that the elevator opens. Step inside, and press the "down" button. Begin a slow countdown from ten to one. With each number, experience yourself going down from one level to another deeper level. Starting with the number ten, feel the physical feeling of moving down. Feel the physical feeling of going down. With each number, repeat the following phrases, "Allow and let go," "Moving down into deeper and calmer levels," "Feeling calm and mentally alert."

Step 3. Visualizing the studio. At the end of the countdown, feel the elevator coming to a gentle stop and see the doors opening in front of you. Step out of the elevator. In front of you is a long corridor. Begin walking down the corridor. Experience yourself in a state of well-being, deeply calm and relaxed, but mentally alert. At the end of the corridor is a door. Know that on the other side of the door is your mental studio. Experience yourself approaching the door, then reaching out to open the door.

Experience yourself stepping through the doorway. Step into the space that is your mental studio. Know that this is the perfect place for you. It can be in any location, of any design. Begin to see this space in detail. See how it is furnished and designed. Know that if there is anything you want to add, you can add it. Furnish it in any way that

you want. This is the place that is especially for you. Make it perfect for you. Have it exactly the way you want it. Notice what the location is like. What are the views like?

Your mental studio is for rest, relaxation, recovery, and for giving yourself powerful commands and instructions to influence your behavior. Notice that you feel a sense of peace and relaxation in the mental studio. Feel yourself being familiar with every aspect of the interior environment as well as the exterior environment. Have everything exactly the way you want it, because this space is just for you.

Step 4. Adding three items to the studio. In addition to whatever you have in your mental studio, include three other items. One item is a large-size screen, like the kind of screen on which slides are shown. The second item is a blackboard. The third is an energy machine. The large-size screen is used for creating scenes and pictures to influence yourself positively. The blackboard is for words or phrases to be used as suggestions to strongly affect your thinking and behavior. On the energy machine, include a lever or dial that you can use to set and regulate the amount of energy this machine is generating. You can learn to use this machine to change your own level of energy to a level that you desire.

It is a good idea to end the mental studio exercise with a couple of general suggestions, such as, "Each time you do this exercise, you access your studio more easily," "The mental studio is a powerful tool for influencing your behavior and performance in successful and desired ways," "Each time you use the -mental studio, you gain greater control over your thoughts and behavior."

The mental studio is to visualization what a launching pad is to a rocket. It is a perfect platform from which to conduct visualizations for furthering your athletic goals. The procedure of the mental studio induces relaxation, heightened suggestibility, and receptivity. Ideas can be strongly imprinted on the mind when the athlete resides in this space.

By using the mental studio, athletes become more self-motivated and self-initiating. Also, the mental studio develops inner-directedness, an important characteristic for athletes striving for peak performance. It enhances inner-directedness, because it creates a feeling of having a built-in gyroscope which sets and guides the athlete's course.

With the completion of the mental studio method, the athlete has each of the exercises that comprise the six basic skills for visualization. These six component skills are the foundation for the primary applications of visualization to sports performance.

PRIMARY USES OF VISUALIZATION FOR SPORTS PERFORMANCE

As mentioned earlier, the primary uses of visualization for sports performance consist of problem solving, attitudinal change, and mental rehearsal. With each of these applications of visualization, the athlete learns to alter his or her responses, attitudes, and expectations in ways that enhance athletic performance.

Visualization Techniques for Problem Solving

A persistent and recurrent problem faced by competitive athletes is stress or pressure. The devastating effects that pressure can have on athletes is well documented. Any athlete aiming for high-level performance has to learn how to cope with pressure. With techniques of progressive relaxation and other methods of relaxation, stress levels can be reduced to manageable levels. However, other strategies besides reduction, are equally valid, and sometimes preferable, for handling stress.

Visualization for Responding to Stress

First under problem solving is a technique which trains the athlete to use stress for activation and energy. Stress is treated as a spur to drive the athlete to higher levels of performance.

Many athletes know how to convert a pressure-packed situation into a feeling of activation and energy that benefits their game. An excellent example from the tennis world is Billie Jean King.

A tennis match between Billie Jean King and Bobby Riggs, that took place in 1970, was billed as the battle of the sexes. All of the hoopla and psyching-out that Riggs did raised the level of pressure on King. King had little to win and a great deal to lose. If King won, the win would be insignificant. After all, Riggs, at fifty-six, was twenty-six

years older than King. However, if Riggs won, it would be a difficult defeat for King personally, and, in a sense, for women tennis players in general. Even with all this at stake, Billie Jean King kept her composure. The pressure was used by King to make her more determined to win. Which she did, in straight sets, by remaining composed-and-playing smart tactically.

Athletes should have in their mental repertoire a method for changing the pressure and anxiety of performance into a spur for heightened levels of performance. The following exercise is designed for that purpose.

Exercise 1. Visualization for Responding to Pressure

Step 1. Relaxation, Sit or lie down in a comfortable position. Take a series of several slow, deep breaths. Use the relaxation cue. Repeat to yourself that the purpose of this exercise is to create a new way of dealing with high stress in athletics. Increase the state of relaxation further by using the countdown technique while visualizing going down in an elevator.

Step 2. Visualization in the mental studio. After you step out of the elevator, project yourself to your mental studio. Using the screen, picture a competitive situation that is highly stressful. It may be just before a race starts, at a critical time in a game, or in competition with an intimidating opponent. Choose a situation in which the stress hurts your performance. Watch the situation to see how you experience the stress. See how the stress builds up in you. Notice how the stress affects you and affects your performance.

Mentally review the idea that you are a transducer of energy. That you can convert one form of energy into another. In fact, you do this all the time with chemical to electrical conversions in the body.

Again see the high stress scene on the screen. This time, however, the effect of the stress is different. See yourself in that pressure-packed situation taking the energy of the stress and converting it to useful forms for you. See this conversion of energy happening at several levels. Physically, see the stress and pressure being converted into a physical feeling of strength and power. See this process happening in the body. The body, like a machine, uses stress as a fuel to energize it.

On the emotional level, see the pressure being converted to feelings of assuredness and confidence. And mentally, see yourself becoming increasingly focused, mentally strong, and determined. With all your senses alert, the physical body moves into a state of activation, becoming charged like a battery. See yourself in that state of readiness and activation.

Step 3. Programming with verbal cues. The scene on the screen shows you having successfully turned stress into activation and energy. With this conversion process in mind, turn your attention to the blackboard in your mental studio. Simply allow and know that on the blackboard will appear a word or phrase that is associated with this state of activation. Know that anytime in the future you can use this word or phrase to turn on the conversion process, so that pressure can be transformed into activation and power. Feel that word or phrase becoming deeply imprinted on your thinking. That word or phrase is a trigger, which, when repeated in pressure situations, automatically begins the process of turning pressure into power.

Step 4. Reinforcement and general suggestions. Know that you will remember everything that you visualized during this exercise. Each time you repeat this exercise, you strengthen the association between the verbal cue on the blackboard and the activation and power state that is the end-product of the conversion process.

Visualization for Responding to Pain

A second major problem for athletes is pain. With top competitors in many sports, pain is present during training practices, during competitions, and after tough, endurance workouts.

With visualization combined with relaxation, it is possible to deal effectively with pain by anesthetizing areas of the body. More intensive mental methods, such as hypnosis, have even been used as the only method of anesthesia for operations, including major operations. When hypnosis is used for surgical procedure, the patient may be fully awake and able to report on experiences throughout the operation. Sometimes, patients report feeling sensations, but the sensations are neutral. They are not interpreted as pain.

The technique of visualization plus relaxation may not be as intensive as hypnosis, but it is still effective for anesthetizing focal regions of the body. Because visualization can be a powerful method for shutting out pain sensations, it is necessary to

build into the technique a threshold, which defines a level of pain beyond which the athlete experiences pain sensations and attends to those pain signals. In essence, the mind directs that pain is not experienced unless the pain passes a point defined by the athlete as beyond the safety level.

The visualization exercise for dealing with pain has several steps: First, a relaxation phase, then a visualization combined with suggestions for overcoming pain, and finally, some general reinforcement statements. In the visualization, the athlete focuses on imagining a pain-blocking system.

In preparation for this exercise, it is helpful to examine a physiology book or biology book and to become familiar with the idea of nerve pathways. It is important to understand that, although there may be an injury in an area of the body, no pain is felt unless the pain messages are transmitted from the pain site via the nerve pathways to the central nervous system (CNS). The visualization focuses on imagining a block in the nerve pathways, creating a closed pain "gate." The visualizer needs to "see" an effective blocking mechanism in place, which permits no pain signals to be transmitted. With no pain messages transmitted, no pain is felt. Creating vividness in the imagery is the key for effectiveness in this exercise.

This exercise begins with the visualizer creating a sensation of warmth in a focal region of the body. This is done because not all athletes have pain spots. Nevertheless, pain blocking can be practiced by using a heat sensation in the body, because the elimination of the sensation of pain is comparable to eliminating the sensation of heat, in the sense that similar mental processes are required in both cases. With the heat sensation created, the athlete can experience the nerve-blocking system working to eliminate the sensation of heat from a given region of the body.

Exercise 2. Visualization for Responding to Pain

Step 1. Relaxation. Sit or lie down in a comfortable position. Take several slow, deep breaths. Use the relaxation cue. Use one of the relaxation techniques, either progressive relaxation or the breathing method, to reach a deeply-relaxed state.

Step 2. Visualization. Choose an area of the body in which you are experiencing pain or in which you frequently experience pain. The left ankle has been selected arbitrarily for this exercise. Create a sensation of heat in your left ankle. Feel an

appreciable change in the surface skin temperature in that area. Build up the sense of heat in that region of the body by imagining an expansion of the capillaries. Then, feel your left ankle becoming even hotter as you vividly imagine a very hot hydroculator being placed on the left ankle. Feel the left ankle becoming increasingly warmer.

Sometimes physicians give what are called, "nerve blocks," an anesthetic agent that is injected into an area of the body. This blocks nerve pathways, so that pain sensations are not felt in that area. You can use this method or an alternate method in your visualization. Visualize with accuracy and in detail the blocking of the nerve pathways by the method you have selected. See the blocking of the nerve pathways occurring a few inches above the left ankle.

Look into the body. Know that no information of any type, sensations of heat, cold, or pain, can be felt when nerve pathways are blocked. See clearly that because of the blocking mechanism you have created, no pain signals can travel from the pain site to the CNS. Recognize that all sensations of pain, or any other feeling, are totally and completely blocked out. Because of this, you no longer feel any sensations of warmth that you experienced before in the left ankle.

Build in a threshold. Recognize that for reasons of safety, a feature is built into this pain-blocking system. When pain reaches a certain level, which you think is appropriate to use, messages or signals of pain go through the blocking system and alert you to the injury area.

Step 3. Reinforcement and general suggestions. Each time you use this method of pain control, you become more proficient at it. By using this and other methods of mental control, you feel increasing command over your body. Know that you can use this method at any time, whenever there is discomfort or pain that prevents you from performing up to your ability.

Visualization for Correcting Problem Areas in Performance

In addition to resolving stress and pain, visualization can be applied to solving specific performance problems. Athletes can easily identify the time or the circumstances in sports which are trouble spots for them. For a runner, it might be race days when there is a drizzling rain and the racing surface is a macadam road that becomes slick. There might be a patterned response by the runner to these circumstances of

complaining, engaging in negative self-talk, feeling worried and apprehensive, and performing under his ability.

Unfortunately, trouble spots have a way of perpetuating themselves. For example, if a figure skater has a problem in the same part of her routine in the compulsories, after a while, a set of negative expectations and a sense of dread can develop around that point. Almost invariably negative expectations and negative anticipation lead to performance decline.

The worst trouble spots are recurrent ones: Every time a certain competitor is faced, every time away games are played, every time a particular distance in a race is reached.

The athlete must clearly identify problem areas in performance; then, recognize that corrections can be achieved or facilitated through visualization.

The following exercise is designed to correct performance in a problem area. Similar to the two preceding exercises for problem solving with visualization, this exercise is divided into three sections. First, you achieve relaxation by using the relaxation cue followed by the countdown technique. The second step involves a projection to your mental studio, in which the visualization takes place. On the screen in the studio, the visualization consists of seeing the way you typically respond in the problem area. Then you observe yourself performing correctly and going through the trouble spot exactly the way you want to perform. Finally, you project yourself into the scene, so that you as the experiencer, go through the sequence, experiencing yourself doing the performance correctly through the trouble spot.

The exercise is ended with some general statements to reinforce the corrected sequence and to impress on the visualizer the idea that each repetition of the visualization strengthens the impact of the imagery and increases the chances of the projected correction replacing the current performance.

Exercise 3. Visualization for Correcting Problem Areas in Performance

Step 1. Relaxation. Get into a comfortable position either sitting or lying down. Take several slow, deep breaths. Use the relaxation cue followed by the countdown technique to achieve a state of deep relaxation.

Step 2. Visualization in the mental studio. Project yourself into your mental studio. Experience yourself seated comfortably, facing the mental screen. Picture on the screen a scene which is a trouble spot for you, a place in your performance where you experience a problem and a dropping off in your level of performance. See exactly what you do in these circumstances. Where do you start to falter? What is the sequence that follows? Monitor your actions. Watch them with detachment. See exactly what you do that creates the decline in your performance.

Now it is time for you to re-do the scene. First, make the screen go blank. For several seconds, see a neutral-colored, blank screen. Then, project onto the screen a scene showing the same place in your performance. Alter the scene so that you start at the beginning of the sequence of action. Go through the same sequence of your performance, only this time see yourself doing everything exactly right. Perform throughout the sequence in a way that shows you doing everything exactly the way you want to. You make the corrections and modifications in exactly the right spots, and you make them automatically. You know exactly what you want to do through this trouble spot and now you see yourself doing it exactly right.

Project yourself into the scene. Once again go through this same section of your performance. Only this time you are the experiencer, the actor in the scene. Experience yourself moving through this section of your performance. Focus on how it feels in your body, as you make exactly the right moves and corrections. Feel that the corrected sequence of action is a natural pattern for you to follow in this section of your performance. Feel that the corrected sequence of action is being strongly imprinted on your mind and in your body memory.

Step 3. Reinforcement and general suggestions. You remember everything that was experienced during this exercise. This technique is a method for changing and correcting performance in a problem area. Each review of the corrected sequence further programs the correct actions into your thinking and into your body memory.

Effects from Practice

When visualization is used for problem solving, a frequently asked question is, "How long do I have to practice this visualization before the correction takes effect?" Meaning, of course, before stress or pain can be overcome, or a problem area in

performance is resolved. A valid question, but one for which there are no simple answers. In essence, it depends. Primarily, it depends upon three factors: The intensity of the problem, the longevity of the problem, and the proficiency level of the visualizer.

In 1984, at one point during the Summer Games, I was in the Olympic compound talking with a track and field athlete, Leslie Deniz. Suddenly, there was a lot of commotion, with one young Black female athlete running past us and several other athletes running after her. It was apparent that the first athlete was crying and very upset. Leslie and I learned shortly afterwards that this young African woman, who had just run in a relay race, had dropped the baton in the race. Most of us can imagine something of what this young woman was going through. Can you imagine the feeling of catastrophe that she must have felt as the baton slipped out of her hand in the pass? With the use of visualization, how long might it take for this track athlete to overcome the negative effects of this performance?

In this example, the critical factor is intensity. When a problem arises in sports in the context of a very intense experience, the length of time it takes for correction through visualization is extended. When experiences are intensive, they make a deep, long-lasting impression on the mind. Therefore, it takes much longer to change or correct problem areas arising from intense situations.

The same is true when the problem that an athlete wishes to solve is a long-standing one. I worked with a golfer, who, as a junior golfer, was one of the top in the country. When I met him, he was in his mid-forties. He was still considered a very good golfer, as an amateur. However, his game had reached its apex when he was in his early twenties. For over two decades, his game had been declining, primarily because of a problem known to golfers as being "ball bound." Similar to target panic in archery, the condition of being ball bound in golf means that the attention of the golfer becomes negatively locked or fixated on the ball. The usual consequences are anxiety, tentativeness, and a chopping motion in the swing, rather than a free, fluid motion. This golfer suffered all of the negative consequences in a pronounced way. What made it especially frustrating for him was that this condition did not exist when he practiced. Only when he played with some competitive spirit, including bets on a round, did this condition of being ball bound return in full force. Adding to his frustration, was that over

the years, he had tried countless ploys and strategies to overcome this condition. Nothing worked. When he saw me, he wanted to know how long it would take to solve the problem. In his case, because of the longevity of the problem, the mental and physical habits in golf that created the problem were deeply ingrained. In these situations, corrections of problems by visualizations require consistent work over time.

Countering the effects of intensity and longevity of problems in sports, is the level of visualization proficiency. Using visualization to correct a problem of stress or pain or to change behavior in a problem area in performance requires strong visualization skills. To strengthen the impact of any visualization, the guidelines for constructing visualizations need to be followed precisely. Also, the visualization needs to be repeated numerous times. Maybe hundreds, maybe thousands of times. With accuracy, vividness, and control in visualization, and with numerous repetitions, the visualized behavior becomes increasingly impressed on the mind. Remember the process whereby the visualized behavior replaces the problematic behavior. What is visualized has an effect on the body physiologically. As accuracy of the visualization is increased, and as more repetitions are done, there is an increase in the probability that the visualized behavior will become the actual behavior in the real-life situation.

Visualization Techniques for Attitudinal Training

A second major application of visualization in sports is attitudinal training. One of the most important attitudes for an athlete is confidence. Confidence training is a good example of attitudinal training through visualization.

Confidence is critical for being a peak performer. With confidence, individuals can push for levels of achievement that others consider out of reach. Confidence allows risk taking, leaving the comfort zone, to engage in tasks that are challenging and demand more of an athlete's potential.

Although some people seem to have naturally high levels of confidence, it should be reassuring to others who are not so confident, that a confident attitude can be intentionally developed.

Often, after a competition, when the winner is being interviewed, confidence comes up as an explanation of the win. How often have you heard, "I played well today. I was feeling confident from the start."

Dan Landers of Arizona State University described to me the results of a study he did with collegiate athletes. He compared athletes who became champions with others who did not become champions. He found three significant differences between the two groups. The athletes who became champions had better self-images, higher self-esteem, and they saw themselves as champions before they became champions. All three differences from these results point to a factor of confidence.

Athletes and coaches know that confidence makes a difference in level of performance, consistency in performance, and, especially, response to critical, pressure plays. What many athletes and coaches do not recognize is that confidence can be developed.

The method for achieving confidence through visualization consists of three steps: Relaxation, visualization in the mental studio, and general statements of reinforcement. In the visualization portion, the practitioner visualizes a time from the past when a high level of confidence was experienced. Then, the athlete examines this state of confidence and describes the physical, emotional, and mental components that make up confidence. A word or phrase is identified that describes each component of the state of confidence.

These words plus the picture of the athlete operating in a high state of confidence form the combined cue that allows the athlete to re-elicite the state of confidence at will.

The logic behind this method for developing confidence is straightforward. Any state, including the state of confidence, can be specified by describing its physical, emotional, and mental components in detail. By assigning a cue (such as a word or phrase) to each component, the state can be re-entered with ease by using the cues as triggers to re-elicite each element that makes up "being confident."

The practice guidelines for this exercise are consistent with earlier recommendations for practicing visualization techniques: Choose a consistent time of day to practice, do the exercise alone, in a quiet, relaxing environment. Also, allow ample time to strive for accuracy and vividness in the visualization. Allow an uninterrupted twenty to twenty-five minutes for the first few weeks that you do the exercise. After that,

fifteen minutes is adequate. The most important guideline is to practice. Practice using the cues to elicit a state of confidence in a variety of circumstances, both in and outside of your sport.

Exercise for Confidence Training

Step 1. Relaxation. Either sit or lie down in a comfortable position. Take several slow, deep breaths. Then, use the relaxation cue followed by the countdown technique. Know that this is a confidence training exercise that teaches you to elicit a state of confidence at will.

Step 2. Visualization in the mental studio. Project yourself to your mental studio. Feel the sense of familiarity and a feeling of being at home in this space.

Sit in a comfortable position where you are facing the mental screen. Scan your memory for a time when you experienced a very high level of confidence. It may have been when you won an award, or achieved recognition, or when you performed at an excellent level according to your own standards. Your memory of experiencing a very high level of confidence may have occurred in work, in sports, or in the arts. Whatever the context of the scene, you clearly recognize the situation at a time when you experienced extreme confidence.

Now project onto the screen a scene from this time when you felt extremely confident. Examine this situation carefully. What was the exact context when this state of confidence occurred? What were you doing? What other people, if any, were in the scene with you? See yourself operating in that state of high confidence, feeling confident and expressing that feeling of confidence.

As you watch yourself on the screen, examine the expression of confidence. Focus on the physical feelings that make up confidence. Remember what the physical experience of confidence was like. What did it feel like? Name or describe to yourself the physical feelings associated with confidence. Did you experience a feeling of being light, or a physical glow in the chest or solar plexus area?

Once you have some of the physical feelings of confidence in mind, turn to the blackboard. On the blackboard, a word or phrase will appear that sums up that physical feeling of confidence. Simply allow and expect the word or phrase that aptly describes the bodily feeling of confidence to appear. That phrase will remain on the blackboard.

Turn your attention back to the mental screen. Again examine the state of confidence that you experienced in this scene. Focus on the emotional experience of confidence. Ask yourself the question, "What is the experience of confidence like emotionally?" How do you describe or name the feelings associated with confidence? Did you feel excited and optimistic?

Would you describe this experience as feeling emotionally high?

Once you determine some of the emotional characteristics that go along with confidence, turn your attention to the blackboard. On the blackboard will appear a word or phrase that sums up the emotional experience of confidence. Once you have the phrase associated with the emotional expression of confidence, turn back to reviewing the scene on your mental screen.

As you watch this scene which shows you very confident, direct your attention to the mental aspects of confidence. What was this experience of confidence like in terms of the beliefs, thoughts, and mental set that you had? What were some of the most prominent thoughts that you had during the experience?

Redirect your attention to the blackboard. See a word or phrase on the blackboard that expresses the mental part of confidence. Have it be a phrase that sums up your experience of confidence on a mental level.

Look at both the screen and the blackboard. On the screen project a single picture of you from the scene you just reviewed. Select a picture that best represents you feeling very confident. At the same time, see the blackboard with the three phrases associated with the physical, emotional, and mental aspects of confidence. In the future, any time you wish to enter a state of confidence you can use these three phrases plus the picture to elicit confidence. By remembering this picture of the "confident you," and by focusing on these three key phrases that describe confidence, you can re-experience the state of confidence. Do this by mentally focusing on the picture of you experiencing confidence, while you simultaneously repeat the three phrases associated with confidence.

Use the three phrases to guide yourself back to the experience of confidence. As you repeat the phrase associated with the physical feelings of confidence, feel your body

re-expressing that state. Do the same with the emotional and mental levels. Each repeated phrase triggers that part of the experience of confidence.

Step 3. Reinforcement and general suggestions. Each time you practice this exercise you become more proficient at eliciting a state of confidence at will. Each time you practice, the picture and phrases become more strongly associated with confidence. With practice of this exercise, you recognize the increased control that you have and can exert over physical, emotional, and mental states.

Effects from Practice

The practice objective with the confidence training exercise is to make the state of confidence an automatic response as soon as the cues are used. There are signposts for the athlete to mark progress toward this objective. It is much easier to create a state of confidence from a neutral state than from a state in which confidence is shaken. The "acid test" for developing mastery is practicing confidence training when there is high risk or high stress. Exhibiting mastery in confidence training -is like demonstrating bodily temperature control by staying cool no matter how hot the temperature is. One level of control is required as the temperature moves into the 80's, more control is demanded as the ambient temperature moves into the 90's, and exceptional control is required as the temperature blazes into the high 90's and over 100 degrees Fahrenheit.

With practice, there is increasing proficiency in bringing about a desired state of confidence. One dimension of greater proficiency is the completeness of the feeling or state of confidence. Another is the creation of confidence against odds that jeopardize confidence, such as intimidation, stress, or risk.

The time that you devote to developing skill in confidence training is well worth it, because of the performance edge when you operate from confidence.

Visualization Techniques for Mental Rehearsal

An Olympic coach with an outstanding record of wins was asked about the reason for his remarkable coaching record. His answer, "Mental rehearsal."

In addition to problem solving and confidence training, the third major application of visualization techniques to sports is mental rehearsal. Essentially, mental rehearsal involves practicing or rehearsing an important upcoming event in your mind's eye.

Mental rehearsal methods may be external or internal. In external mental rehearsal, you view yourself in a scene from the perspective of an observer of your behavior. With internal mental rehearsal, you project yourself into the scene so that you become the experiencer, rather than the observer.

External Mental Rehearsal

One of the most effective external mental rehearsal techniques is called "best performance" mental rehearsal. For this technique, you select the event that you want to prepare with mental rehearsal. Then, using a brain-storming method, construct a list of the characteristics associated with your performing at your best level. For example, best performance for a cyclist might include relaxed breathing, smooth and powerful cadence, mental focus, confident feeling, well-rested, sense of being fully prepared and ready.

The next step involves using the mental studio. In your mental studio, review a time in the past when you did your best sports performance ever, in an event like the one for which you are currently preparing. For example, if you select an important track meet as the upcoming event, then scan your memory until you find the time in that past when you did your best ever in running this race distance. In your mind's eye, review this best performance from the past, noting each of the significant characteristics that made it your best performance. Next project the scene ahead in time and see yourself at the upcoming meet performing with the same characteristics and the same form that you exhibited in your best performance from the past. In this visualization, systematically include each of the best performance characteristics that you came up with in the brain-storming session and include all of the key characteristics that you exhibited in your best performance from the past.

Practice guidelines. With important events in your sport that you want to preview and practice mentally, it is best to use both external and internal mental rehearsal techniques or some combination of them. In the initial learning stages, however, it is best to practice the two methods separately.

The primary objective for practicing mental rehearsal techniques is to produce high-level performances consistently. For mental rehearsal to assist in this desired outcome, repetition is necessary. My recommendation is that the mental rehearsal exercise be repeated at least once a day for a period of three to four weeks prior to the event.

Besides repetition, the other factors for effectiveness in mental rehearsal are following the recommended guidelines regarding tempo, vividness, environmental detail. Additionally, there are the regular practice guidelines for all visualization exercises: a quiet, relaxing environment, an uninterrupted time, and a consistent time of day to practice.

Remember that the visualization part of the exercise which follows is preceded by a brain-storming session, in which you list the characteristics of your performing at your best.

External mental rehearsal exercise: The best performance technique

Step 1. Relaxation. Sit or lie down in a comfortable position. Take a series of slow, deep breaths. Use the relaxation cue followed by the countdown technique to reach a deep state of relaxation.

Step 2. Visualization in the mental studio. Project yourself into your mental studio. Experience yourself seated comfortably in a position where you can see the mental screen. Think of a time when you were at your best in your sport. Recall when that time was in terms of the specific event. See yourself on the screen at that time when you did your best performance. Know that in your mind you have a complete tape of that entire situation, which you can project on the screen. Take this tape back to the point where you can see how you felt just before your competition started. Notice in detail how you were at that time. Notice your level of confidence. Remember the kinds of statements that you said to yourself about the competition, just before it started. What were your expectations? Once the competition starts, look closely at how you were functioning. Notice at what point you had the feeling that you were really on. Remember what that feeling was like. Watch yourself operating with that feeling. Notice how you felt dominant and in control. Observe how each part of your performance was working. Remember the feeling that things were going your way. Notice the feeling of readiness and preparedness that you had. See yourself feeling strong, confident, and in the flow.

As you continue to visualize this best performance time, notice how well your concentration was working. Make sure that you perceive these scenes sharply and clearly.

Focus your attention on each of the characteristics that you consider to be of importance in relation to your being at this top performance level. Experience yourself memorizing the important characteristics that made it possible for you to do your best performance. Feel that these characteristics are becoming deeply imprinted in your mind and impressed in, body memory as well so that any time you wish, you can picture and describe this top level of performance.

Now see the mental screen go blank. Next on the screen, you will see yourself in that important upcoming event that you have selected to mentally rehearse. At the very start, see yourself having the same feeling that you had prior to your best performance. See yourself having the same feeling of confidence. You will see yourself going through each phase of the performance with the characteristics that are associated with your best performance. Know that everything is working for you in the same way that it was during your best performance. See yourself feeling dominant and in control. Observe yourself functioning the same way as you did during your best performance. See yourself having that winning feeling, knowing that everything is going your way. As you continue to view this upcoming situation, see yourself operating in a complete state of concentration, so that you stay totally alert and in the present. See everything in this event as sharply and clearly as you can.

See yourself functioning at a peak level, so that your performance leads to the outcomes you want. Bring into this preview, any characteristics that you consider to be important in enabling you to function at your top level. See yourself having that winning feeling and all of the features that are part of you being at your best.

Step 3. Reinforcement and general suggestions. Each time you do this mental rehearsal, it reinforces and programs the desired performance level for your future event. Each time you practice, you strongly influence your thinking and your behavior toward your best performance level.

Internal Mental Rehearsal

In internal mental rehearsal, events are previewed from the perspective of the experiencer rather than the observer. Whereas external mental rehearsal emphasizes visual information, internal mental rehearsal focuses attention on the physical feelings or the kinesthetic aspects of the experience, which results in kinesthetic information being instilled in memory. Internal mental rehearsal is designed to improve motor skills and actual movements, and to develop internal images for kinesthetic feelings associated with correct movements.

This visualization technique has four steps. First, a restful, calm state is created, with eyes closed and focus on retinal images and lights that appear. In step two, there is continued observation of retinal images. Then, from behind the images, a static scene appears, which is a scene of the event selected for mental rehearsal. In the third step, the scene progresses from static to dynamic. The visualizer takes the position of an eyewitness observer in the scene.

In the fourth and final step, you project yourself into the scene so that you are the actor rather than the eyewitness observer. Then, you experience playing out the scene at your best performance level. The steps for internal mental rehearsal are based on stages of "dreaming" described by Carlos Castaneda (1981).

Internal mental rehearsal exercise: Specific instructions.

Step 1. Restful observation. Let your eyes fall gently closed.

To achieve this first stage, feel that all your senses that pick up information about the external world are becoming dormant. As your senses become increasingly dormant, experience your inner awareness becoming sharper and clearer. Feel your focus of attention changing from the usual external focus to an internal one. To help create this internal focus of attention, see the different colored light or lights through your eyelids. In addition to these lights, notice the retinal images that appear. With your full attention focused internally on these lights and images, notice that it feels as though the external world is fading into the faraway background. Feel that there is a dissociation from the external world and a re-focusing on the internal one. Have a feeling of certainty that you have mental control over each of the sensory channels for input from the external world. Experience yourself intentionally turning down the volume of each sensory channel.

Similar to the experience before failing asleep or the feeling prior to fully waking, notice that the sounds from the external environment and other stimuli are turned off. However, in contrast to what happens before you fall asleep, feel mentally keen and awake.

Step 2. Dynamic observation. In this second step, the lights that you have been seeing begin to dissipate. Behind the lights, you see a scene, which becomes more apparent as the lights dissipate. You notice that the scene is stationary. The scene is from what you have selected for your mental rehearsal. The scene involves you functioning at your best performance level at an up-coming competition. The scene is static, as though it is frozen, but it is three-dimensional. Begin to examine this scene in detail, while you remain in the perspective of a dispassionate observer. Notice that the scene has the same depth and detail that a single frame from a film has.

Step 3. Witnessing. As you continue to observe the scene, notice that the scene changes from static to dynamic. The action in the scene begins to progress. Alter your perspective so that you become an eyewitness to the events as they occur. As an eyewitness, you are on the scene watching the action. Notice the primacy of both visual and auditory senses. You see the whole environment in detail, and you are aware of any sounds that occur in this environment. As an eyewitness, you are acutely aware of the sounds that occur in this scene.

Step 4. Initiative. In this fourth step, feel a sense in which you are compelled to act. Feel that you are compelled to take steps to control the course of the experience. Project yourself into the scene, so that you are the actor rather than the eyewitness observer. Experience yourself in the scene creating the action and carrying out the scene you have selected. Your purpose is to create and guide this scene so that you perform at your best performance level. Experience yourself going through each step of this event with all of the characteristics and qualities of operating at your top level. Experience yourself in a state of concentration, feeling dominant and in control. Experience yourself performing with each of the key characteristics associated with your being at your best. Focus on how it feels when you perform at your peak level. Your performance throughout the scenes continues at a high level of performance because it incorporates all of your best performance characteristics. The action follows that course you intend. The

events happen the way you want them to happen. The action proceeds smoothly and easily.

As the scene comes to a conclusion, know that you have accomplished exactly what you wanted. The results that you wanted to accomplish are achieved.

Effects from Practice of Mental Rehearsal

Each time you practice these mental rehearsal exercises, you reinforce desired performance levels. You program and influence yourself to operate at a peak level of performance. The more you practice these visualization skills, the more you experience the sense that you direct your experience to achieve the levels of success you are seeking.

For best results with mental rehearsal, after the external and internal methods are familiar to you, use them together to preview an event. The combination creates powerful effects on the visualizer, because strong programming of the three main sensory channels, visual, auditory, and kinesthetic, is achieved.

With repeated and accurate mental rehearsal, the previewed performance becomes more readily available and more automatic in the real situation. For example, a difficult defensive move in a zone play in basketball might be part of a player's repertoire, but his confidence in selecting it and his execution in performing it might both be shaky. With mental rehearsal, he can expect that the defensive play will become a more effortless, automatic response. Sometimes, when events follow what has been rehearsed, there is a sense of *deja vu* and a feeling of exhilaration that accompanies it, because it seems as though the actions in real-life situations so perfectly match what has been thought or planned in the mind.

BENEFITS OF VISUALIZATION

There are numerous benefits for those who consistently do visualization practices. With visualization, you can increase your rate of learning, correct bad habits, control pain, maintain skill while injured, and even generate more energy. However, the most important benefits of visualization are derived directly from the major uses of visualization in sports. With problem solving, confidence building, and mental rehearsal, the main benefit in sports is improvement in athletic performance. Each of the major

uses of visualization allows the athlete to further desired athletic goals. Visualization is the master skill for performance enhancement in athletics!

SUMMARY

Most of us have spent considerable time daydreaming since early childhood. In a sense visualization is directly related to something we have been doing all our lives, but we need to take it further and make it a deliberate mental workout that develops skills and assists us in performing desired actions. By mentally preparing for a competition, we have a better chance of achieving desired goals, than if we just prepare physically and do not rehearse the event in our mind.

Since the body cannot distinguish between an event which is experienced and one which is vividly imagined, we can literally "trick" our mind into believing we have done a certain thing before. Creating a "mental blueprint" of success increases your chances of performing the way you visualize (Hill, 1963).

High achievers use visualization so they can excel and do their best in every situation. One characteristic of peak performers is that they are able to transcend their previous levels of accomplishment. One reason they are able to do this is visualization.

Does this technique really work? Yes, it does, because it allows the practitioner to simulate conditions and practice performance. Do you remember how the astronauts learned how to walk on the moon? They practiced it under simulated conditions over and over until it became very natural for them. While they were on the moon, they said, "It was just like we practiced it in our minds." If it can work for a multi-billion dollar space project, it can work for your activities of training and competing.

Learn to make it work for you. Make yourself lie down and steal a little time to plan your successes. Use the special environment of the mental studio to help you enter the deep relaxation state. In your mental studio, you can take greater control of your thinking as you progress toward each of your goals.

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ABOUT THE AUTHOR

Marie Dalloway specializes in Optimal Performance Training for business and for sports. She has a Ph.D. degree in psychology from the University of Massachusetts.

As a consultant and professional speaker, she has done presentations for major companies such as Honeywell and APS, as well as for top-level athletes, including the U.S. Biathlon Team, the Women's World Championship Judo Team, the Men's World Championship Judo Team, and Leslie Deniz, the silver medallist in the women's discus. She has done optimal performance training at the Olympic Training Centers in Lake Placid, New York and in Colorado Springs, Colorado. Portions of a mental training program that she did were televised by ABC Olympic sports coverage. She has acted as a consultant for the United States Tennis Association (USTA) and has been a recipient of a Sports Science Grant from the USTA.

Marie Dalloway has been a regular writer for the *Arizona Running News* (1984,1985), *Sportsweek USA* (1985), the *Arizona Road Racers* (1986, 1987), *Sun Tennis* (1993, 1994), and *Coaching Women's Basketball* (1995). In addition to numerous articles, she has written two audiocassette tape albums, one on tennis and one on success

in business. She has also written a training video for athletes titled, *Visualization Training Exercises*. CD ROMs by Marie Dalloway include *Visualization Exercises for Mental Preparation, Stress Control, and Focus Under Pressure*.

Books by Marie Dalloway include *Mental Skills for Winning, Winning for Women, Steps Along the Way, Reflections on the Mental Side of Sports, Performing Under Pressure, Stress Control, and Focus Under Pressure*, plus a series of training manuals on sport psychology: *Visualization: The Master Skill in Mental Training; Concentration: Focus Your Mind, Power Your Game; Drive and Determination: Developing Your Inner Motivation; Risk Taking: Performing Your Best During Critical Times, and Visualization Exercises for Mental Preparation*.

She is the Director of the Optimal Performance Institute in Phoenix, Arizona. Her programs, seminars, and tapes are designed to teach individuals how to develop the traits associated with high achievement.

Books, Videos, and CD-ROMs Available From Performance Media

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