

**APPLYING MENTAL REHEARSAL
AND IMAGERY TECHNIQUES
TO LEARNING, PERFORMING AND TEACHING ORGAN MUSIC**

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CHAPTER 1: INTRODUCTION

Preface

The use of mental imagery in the creation of music goes back many centuries. Composers such as Mozart, Schumann, Wagner and Brahms utilized mental processes in their compositions. Schumann stated that he saw his music as “pictures ...clothed in lovely melodies.” Mozart heard entire compositions in his head and then could write out a single part, without the full score. Tchaikovsky also heard symphonies in his head before he put them on paper.¹ In 1926, Henry Cowell wrote an article on his compositional process in *American Journal of Psychology*. In this article, Cowell described how he relied on mental imagery to rehearse and learn the compositions of others, thus improving his ability to hear and refine his own works.² Olivier Messiaen claimed that harmonies evoked specific colors in his mind’s eye and the myriad of colors that he experienced influenced his innovative compositions for organ, piano, orchestra and a variety of other mediums.

Over the past thirty years, there has been a surge in the interest of mental imagery and rehearsal in a variety of fields. In the late 1970’s and 1980’s, sports psychologists began to actively research and analyze the use of mental rehearsal and imagery in the learning and performing of motor skills. Although studies have varied, the majority of research has found that in learning and retaining a motor skill, mental rehearsal combined

¹M. Agnew “The Auditory Imagery of Great Composers,” *Psychological Monographs* 31 (1922): 282.

² Henry Cowell, “The Process of Musical Creation,” *American Journal of Psychology* 37 (1926): 233-236.

with physical practice is much more effective than physical practice alone. The type of mental control and focus required in athletics parallels that required of musicians.

In particular, playing sports and playing the organ exhibit many common elements. Each of these fields requires consistent goal-setting and motivation on the part of the player. They also demand a commitment to hours of daily practice in order to gain maximum proficiency. Sports and organ playing both require focused concentration and the ability to eliminate irrelevant thoughts. Unfocused or wandering attention may cause mistakes that would prove detrimental to the athletic or musical performance. Organ playing may be even more similar to sports than other musical pursuits because of the amount of physical coordination, balance and complexity of movement that organ playing requires. It is a very physically demanding instrument that requires a precise amount of tension in specific muscle groups, just as any sport demands.

In his text, *Athletes' Guide to Mental Training*, Robert Nideffer states, "Interviews with top divers, ice hockey and field hockey players, swimmers, and gymnasts indicate that almost 98% use some type of imagery. There are tremendous differences between these athletes, however, with respect to their imagery skills."³ Mental rehearsal and imagery skills may vary as much as the individuals who employ them. As Nideffer continues, "The athlete who can use visual, auditory, and kinesthetic cues to speed learning and facilitate timing and coordination is at a decided advantage, especially as pressure increases."⁴ Organists, like athletes, who employ these techniques could also discover advantages in their quality of learning, retention of the music and ability to perform.

³ Robert Nideffer, *Athletes' Guide to Mental Training* (Champaign, Illinois: Human Kinetics Publishers, Inc., 1985), 43.

⁴ *Ibid*, 45.

Imagery Theories

It is unclear exactly how and why mental imagery and rehearsal, when combined with physical practice, can benefit musicians, athletes, and individuals in a variety of other fields. There are two theories concerning why mental imagery is effective: the psychoneuromuscular theory and the symbolic learning theory. The psychoneuromuscular theory supposes that “vividly imagined events produce an innervation in your muscles that is similar to that produced by physically executing the movement.”⁵ The brain senses imagined movement very similarly to how it senses actual physical movement and muscle memory can be improved through mental practice. The symbolic learning theory states that “...rehearsal of a sequence of movements involved in a task is useful because movements are symbolic components of the task.” A learner programs the muscles and prepares the body by forming a mental blueprint. This helps one create and code movement patterns that become more familiar the more they are rehearsed.⁶

Although no research has determined specifically why mental imagery and rehearsal are effective, many studies have shown that the combination of mental and physical rehearsal is superior to physical practice alone. Many organists may benefit from understanding the research that has been done in this field and employing specific mental practice techniques both during practice sessions and away from the keyboard.

⁵ Karlene Sugarman, *Winning the Mental Way* (Burlingame, CA: Step Up Publishing, 1999), 172.

⁶ Ibid.

Distinctions between Mental Rehearsal and Mental Imagery

Mental rehearsal involves a conscious effort to analyze motions, sounds, and senses as well as release unwanted tension in the muscles.⁷ For musicians, Malva Freymuth states the following, “Mental practice has two basic functions: It heightens awareness of sensory feedback, and it allows the mind to be in conscious control, *directing* physical actions rather than just responding to them.”⁸ With any physical activity, a mental representation precedes each intentional physical motion. Within milliseconds, an action is visualized and the brain makes a blueprint which it sends out through the central nervous system to the various nerves, fibers and muscles that will make that movement. When providing an accurate and efficient mental representation of a task before it is formed, a task can be learned more quickly and then analyzed and improved.⁹

When incorporating mental rehearsal, one may employ both mental recall and mental projection. Mental recall involves recreating a past experience. This technique may allow a performer to remember the success of a past performance or allow for the analysis of problem areas. Vividly imagining prior successful performances provides a foundation for creating future successes. A musician may also employ mental recall of a previous practice session and identify unnecessary tensions or poor posture and then mitigate these detriments in the future. Mental projection allows the individual to imagine an ideal sound or performance in the future. This may include imagining the

⁷ Ibid, 188.

⁸ Malva Freymuth, *Mental Practice and Imagery for Musicians* (Boulder: Integrated Musicians Press, 1999), 53.

⁹ Ibid, 59-60.

best phrasing of a passage during a practice session, or imagining a successful upcoming audition or concert.¹⁰

Mental imagery differs subtly from mental rehearsal. Nideffer describes imagery as “... the ability to develop an image without necessarily analyzing its content.” This procedure involves seeing an image in the mind’s eye as if watching a movie.¹¹ There are five different types of general images. The most common is a memory image: this involves remembering a previous experience or place, such as a significant event in one’s life or a childhood bedroom. Eidetic images are a form of memory image in which one can see things in the mind’s eye in a photographic manner. This would be the case for one who can look at a piece of music and then imagine the score with precise accuracy. This type of imagery may last for only moments, or it may be retained for years. Imagination images are similar to memory images in that they may involve elements of a past experience, yet the image differs from the original perception. One may imagine lying on the beach under the warm sun or playing an upcoming concert. The images are based on previous experiences, yet the current image may possess different details. Individuals may also experience after-images; this most often occurs when someone sees a bright flash against a dark background, for example a camera flash at night. Finally, another common experience is recurrent image. This occurs when someone sees an event over and over again in the mind’s eye; it may involve a traumatic experience such as an auto accident or a pleasant event such as a first date. Musicians often experience

¹⁰ Ibid, 24.

¹¹ Robert Nideffer, *The Inner Athlete: Mind Plus Muscle for Winning* (New York: Thomas Y. Crowell, Co., 1976), 188.

recurrent image by replaying in their minds either extremely negative or highly successful performances.¹²

The most vivid and successful imagery involves all of the senses; however, the most common forms of imagery are aural, visual and kinesthetic. For musicians, aural imagery, or hearing sounds in the mind, is imperative and often comes easily due to the musician's practice and experiences. Aural imagery can be strengthened by playing a passage, mentally hearing the music and then repeating this until the aural representation is as clear as the actual performance. Visual imagery involves the ability to see objects or events in the mind's eye. This may entail seeing a score away from the keyboard to enhance memory, imagining watching one's self perform as if sitting in the audience, or mentally visualizing the instrument and movement of the hands and feet from an internal perspective. Kinesthetic imagery indicates imagining the sensations involved in muscular movements. For example, organists can employ kinesthetic imagery by thinking about what it feels like to play an exercise or passage of music, focusing on the muscle movements in the fingers, legs, arms and shoulders.¹³

Vivid imagery may also incorporate the senses of smell and taste, resulting in olfactory and gustatory imagery. An organist might associate a successful performance with the smell of a flower arrangement that happened to be near the instrument at this occasion. The specific wood of an organ or a room might also have distinguishing smells that can enhance the imagery experience. Taste may also play a role in imagery if one has a particular food or a mint before or during a performance. All of the senses play a role in creating vivid, effective imagery experiences.

¹²Mike Samuels and Nancy Samuels, *Seeing with the Mind's Eye: The History, Techniques, and Uses of Visualization* (New York: Random House Bookworks, 1975), 39-55.

¹³Freytmuth, *Mental Practice and Imagery for Musicians*, 36-44.

Bruno Repp has identified four different types of musical imagery. The first is that in which a composer hears unwritten music in his head before it is put onto the printed page. The second is the process in which a trained musician can hear music from a printed score through an understanding and thorough experience with chords, intervals and rhythms. Third, one may retrieve a previously heard musical passage from memory, with or without a visual score. Finally, a performer may use imagery during a performance to attain the desired emotion and sound from a work. This may involve imagining specific moods or emotions that relate to the composition or by imagining creative ideas or scenes that correspond to the music's character.¹⁴

One may employ mental rehearsal or imagery from two perspectives: external or internal. External imagery requires mentally viewing oneself practicing or performing from an audience's perspective; this is similar to watching a movie of one's own activity. Internal imagery requires that one sees things as he would while practicing or performing, imagining the muscle sensations that correspond to the task. For example, an organist exercising internal imagery would imagine what the instrument looks and feels like as he is playing as well as the feel of muscle movements in the corresponding muscles and any other sensation that accompanies playing. Kinesthetic imagery is the term used for describing what it feels like to be playing, noticing the feeling of the muscles, tension, body position, etc.¹⁵

¹⁴ Bruno H. Repp, "Expressive Timing in the Mind's Ear," in *Musical Imagery*, ed. Rolf Inge Godøy and Harald Jørgensen (Lisse, Abingdon, Exton, Tokyo: Swets and Zeitlinger, 2001), 185.

¹⁵ Dorothy Harris and Bette Harris, *The Athlete's Guide to Sport Psychology: Mental Skills for Physical People* (Illinois: Leisure Press, 1984), 96.

References to Mental Rehearsal and Imagery in Pedagogical Texts

Many pedagogues have encouraged the use of mental imagery and rehearsal in piano texts throughout the twentieth century. In his 1970 document, Walter Goldreich evaluated the references to psycho-physical techniques that appeared in piano texts published between 1900 and 1970. The term psycho-physical refers to the use of the mind as it controls the muscular movements involved in playing, in this case, the piano. There are a plethora of references to both implicit and explicit psycho-physical ideas in writings on piano playing that Goldreich cites in this work.¹⁶

Piano pedagogues prior to the twentieth century stressed the importance of the mind's leadership in piano technique. Goldreich states, "Moscheles believed that the mind should practice more than the fingers, and Nicholas Rubinstein pointed to the need for the mind being directed with great attention to musical problems."¹⁷ Ludwig Deppe, active in the late nineteenth century, was one of the first pianist/writers to acknowledge the importance of mental aspects in piano playing. These ideas, however, did not flower until the twentieth century when a great many musicians and writers in other areas acknowledged the importance of mental leadership in physical and artistic tasks.

In 1908, Goby Eberhardt introduced his ideas on mental practice in his text, *My System for Practicing the Violin and Piano-Based Upon Psycho-Physiological Principles*. A violinist, Eberhardt suffered paralysis in his left hand due to a stroke and was unable to use his left hand in playing the violin. He devised a method of practicing in which he placed his fingers over the fingerboard and imagined that they were moving

¹⁶The scope of this research did not require looking at all of these pedagogical texts individually. The following summary comes from Walter Andrew Goldreich, "References to Psycho-Physical Relationships in Piano Technique as Reflected in Twentieth-Century Writings about Piano Pedagogy" (DM doc., Indiana University, 1970), iii.

¹⁷ Ibid, 4.

in the proper positions. Eventually, he regained control over the fingers. He set forth the idea that practice is only valuable and worthwhile when the learner "...involves the mind first and foremost."¹⁸

Many writers on piano technique throughout the twentieth century have placed great emphasis on the use of aural imagery. Josef Hofmann stresses this in his text entitled *Piano Playing* from 1908. He believed that poor practice or performance was the result of a poor tonal image in the musician's mind. In contrast, a clear tonal image would result in efficient practice and successful performance.¹⁹

Daniel Gregory Mason stressed the importance of using the mind to direct a tactile sense at the piano in his 1912 book, *A Neglected Sense in Piano Playing*. He suggested that a pianist put his mind into the muscle groups of the hand so that the muscular movements and sensations would be controlled and remembered.²⁰

Luigi Bonpensiere's book, *New Pathways to Piano Technique* published in 1953, presents revolutionary ideas regarding the interaction of mental and physical skills. "Ideo-Kinetics is a technique which is based on the conviction that ideation, or the imagining by the mind, contains all the necessary potential for skilled physical action." This in turn requires a release in which the participant forgets about "...all thought, feelings, or sensations about that physical action."²¹

Powell Everhart set forth the idea of "Intention-Corroboration" in his text, *The Pianists' Art* (1957). Intention refers to the mental idea of a desired action. Corroboration denotes both mental and physical aspects. Once the physical action is

¹⁸ Ibid, 12.

¹⁹ Ibid, 15.

²⁰ Ibid, 22-24.

²¹ Ibid, 93-94.

performed, one produces a mental analysis of how well the physical action portrayed the mental ideal. He further stated that sound and listening are the most important aspects of musical performance.²²

Alfred Mouledous advocated the use of visual imagery in his 1964 text entitled *Mental Practice*. He suggested playing groups of keys that are several octaves apart with a relaxed, horizontal arm motion. Goldreich summarized Mouledous's philosophy by stating that the performer must "...visualize the way the configurations look by holding a vivid image in his inner eye, not ear. He also must be very passive about his involvement in the physical action."²³

Several organ method books also briefly mention mental practice ideas. Roger Davis refers to mental leadership in his introductory comments on practice techniques in his book, *The Organist's Manual*. He states, "Avoid thoughtless mechanical playing. Set goals and strive for perfection in all details. Occasionally rest your hands on your lap and carefully read and think through a section for study." Davis promotes mental analysis and preparation within practice sessions, but does not give the learner any specific guidelines for mental rehearsal or imagery.²⁴

In Harold Gleason's eighth edition of *Method of Organ Playing*, mental rehearsal is suggested for developing a strong aural memory when memorizing a work. Gleason also promotes visual imagery by stating, "Visual memory may be developed by concentrating on a measure of music, consciously noting all its details, and then

²² Ibid, 97-98.

²³ Ibid, 118.

²⁴ Roger Davis, *The Organist's Manual* (New York, London: W.W. Norton & Company, 1985),

reproducing it from the mental image.”²⁵ This text focuses only on incorporating aural and visual imagery for memorization and does not discuss the involvement of other senses or how an organist could incorporate this technique during the initial learning process.

Wayne Leupold stresses the incorporation of senses in mental rehearsal at the organ in *First Organ Book*. He states, “After practicing a passage several times, **SLOWLY** (at least half tempo) and **SILENTLY THINK** through it without playing. Be aware of all aspects of what the body needs to be doing: balance, fingerings, pedalings, preparations of shifts of the hands and feet, what the lines and chords “feel like” in the hands and feet, and most importantly, what the music sounds like.”²⁶

Organ playing requires a variety of complex skills from balance and changes in body position to manual and piston changes that provide challenging physical movements unique to the instrument. These physical challenges can often complicate the goal of musical playing. Organists, it seems, could benefit as much, or more, from the use of mental rehearsal and imagery as other instrumentalists.

The ability to incorporate mental rehearsal and imagery first depends upon one’s capacity to relax the body, maintain a calm state and practice focused concentration. These techniques may be employed by organists just beginning their study, college major and non-major students, as well as advanced professional players. Employing mental techniques along with physical practice may have great benefits for organists including increasing the speed of learning music, enhancing retention of the music, influencing

²⁵ Harold Gleason, *Method of Organ Playing*, 8th ed., Catherine Crozier Gleason, ed. (New Jersey: Prentice Hall, 1996), 58-59. This study attempted to use the most current texts, however, this information actually dates back to Gleason’s sixth edition published in 1979.

²⁶ Wayne Leupold, ed., *First Organ Book* (Boston: ECS Publishing, 1995), 66.

creative interpretations and reducing the detrimental effects of performance anxiety.

Learning to employ mental rehearsal and imagery is a time consuming endeavor that requires daily practice, analysis and improvement; however, the benefits will likely pay off in the long run, just as learning to play the organ takes much time and dedication, but reaps great rewards to the performers and audiences.

CHAPTER 2: RESEARCH INTO MENTAL IMAGERY

Early Studies

Researchers have been conducting studies into the use of mental imagery and its impact in music, athletics and other fields for more than a century, and over the past thirty years, significant advances have been made in this area. Mental imagery research in a single field may be generalized and applied to benefit other areas. Studies into musicians' use of mental rehearsal and imagery have been conducted in a variety of ways. This research has involved interviews of musicians and how they employ mental techniques, measurements of brain and muscle activity during the mental imagery or rehearsal process and measurements of the accuracy of sight-reading or memorization when mental rehearsal and imagery are included. While measuring accurate notes and rhythms is a straightforward process, it is difficult to measure how a learner develops musically and personally through the use of mental imagery and rehearsal. Organists can benefit from the conclusions made in the following studies and apply the results to improve both practice and performance.

One of the earliest studies into mental imagery and music was performed in 1909 by G. H. Betts at the Teachers College, Columbia University. His initial research found that out of eighteen music students, fourteen used auditory imagery during ear training exercises and that this use of imagery increased their aural recognition accuracy. Betts' second study measured the use of imagery while subjects looked at a passage of notated music. Out of nineteen participants, fifteen reported that they employed auditory

imagery, sixteen utilized kinesthetic imagery and ten incorporated visual imagery. A third study investigated the use of imagery while listening to a passage played on the piano. Eighteen of nineteen students experienced visual or kinesthetic images while listening to the music.¹ Even though Betts' research was a limited study using a relatively small number of subjects, it illustrates the interest in mental processes and music at the beginning of the twentieth century and shows that many people subconsciously incorporate imagery when hearing music or seeing a score.

Mental Rehearsal and Memorizing Piano Music

In the middle of the twentieth century, Grace Rubin-Rabson promoted and researched mental rehearsal and its effect on learning and memorizing piano music. Rubin-Rabson reviewed earlier studies into memorization and made three conclusions in this process: 1. Memorizing is more efficient when the learning and memory process are executed as a unit. 2. Learning each hand separately provides a better approach than learning hands together. 3. Learning an entire eight measure phrase presents no differences than learning two four-measure groups, or four small motives.

In 1941, Rubin-Rabson conducted an experiment involving nine well-trained adult pianists. Each pianist performed the experiment three times, then all relearned the passages two weeks later in order to measure retention in the different learning processes. The literature was taken from outside of the traditional piano repertoire and involved eight-measure phrases of contrasting harmonic, contrapuntal and melodic styles.

¹ William H. Trusheim, "Mental Imagery and Musical Performance: An Inquiry into Imagery Use by Eminent Orchestral Brass Players in the United States" (Ed. D. diss., Rutgers, The State University of New Jersey, 1987), 76-77.

Rubin-Rabson's initial study required that each pianist visually and mentally analyze a musical passage for three, six or nine minutes, then each subject notated what he recalled. The accuracy and length of the transcription was much greater for those who studied the passage six minutes, than for those who only had three minutes of examination; however, nine minutes of study provided a similar result as six minutes. The participants learned the music after studying it for six minutes, and the additional three minutes merely provided a period of overlearning.

In addition to researching accuracy in notation after mental study of a musical passage, Rubin-Rabson also tested to determine if mentally rehearsing a passage prior to physical performance would help one reduce the number of keyboard trials required to memorize the passage. After visually and mentally studying a score for three minutes, the pianists required eight keyboard trials for a perfect performance; the participants required an average of 5.18 keyboard trials after six minutes, and 4.07 trials after nine minutes of study. Thus, with an increase in the amount of mental rehearsal and study, the pianists required fewer keyboard trials in order to accurately memorize the passage. In addition, after two weeks, Rubin-Rabson found no differences in retention depending upon the amount of mental learning and keyboard trials.

Rubin-Rabson's second study gave each pianist five minutes of preliminary study to mentally rehearse and analyze a considerably more difficult passage. In addition, two of the groups inserted a four minute period of mental rehearsal mid-way between keyboard trials or at the end of the keyboard trials. A third group practiced extra keyboard trials rather than utilizing mental rehearsal. Rubin-Rabson found that the four minute mental rehearsal within the physical keyboard practice significantly reduced the

number of actual keyboard trials necessary to successfully memorize the material. With the retention test, taken two weeks later, those with intermediate mental rehearsal retained the music just as well as those who utilized additional keyboard trials instead of mental rehearsal and both were better than those who employed mental rehearsal only at the end of the physical practice session.²

To sum up the research, Rubin-Rabson stated,

The intensive mental rehearsal of the material at some point before the completion of the learning trials not only saves keyboard trials but is as effective for retention as a greater number of keyboard trials followed by keyboard over-learning equivalent to the mid-way study. As for mental rehearsal after the learning point, this seems to be inferior to both of the other time distributions.³

Rubin-Rabson's research demonstrates that incorporating mental rehearsal into physical practice sessions may decrease the amount of physical practice necessary to memorize a passage; however, including mental rehearsal only at the end of a practice session may not provide additional benefits. It seems likely that if this type of rehearsal expedites memorization, then it could also improve one's learning of piano or organ music whether or not memorized performance is the goal. Although many organists use score in performances, the music becomes much more secure in the body, mind and fingers through the process of memorization. Rubin-Rabson's research indicates that perhaps a pianist, or organist, can reduce the amount of time spent in physical playing by interspersing periods of mental rehearsal throughout a practice session. This has the benefits of giving the muscles time to relax and also assuring that the mind is engaged in the practice session.

²Grace Rubin-Rabson, "Mental and Keyboard Overlearning in Memorizing Piano Music," *Journal of Musicology* 3 (1941): 34-37.

³Ibid, 37.

A Meta-Analysis of Mental Imagery Research

In 1983, Deborah Feltz and Daniel Landers published a meta-analysis which reviewed sixty studies testing the effectiveness of mental imagery and rehearsal studies in sports, music and other tasks from the 1930's to the early 1980's. A meta-analysis is "...the combination of results of independent studies for the purpose of integrating their findings."⁴ Their research yielded four propositions concerning mental rehearsal which are equally relevant for athletics, music and other performing arts.

Proposition I: "Mental practice effects are primarily associated with cognitive-symbolic rather than motor elements of the task." Mental practice allows one to focus on the symbolic components of an entire skill. Taking time for mental practice allows one to further refine the temporal and spatial aspects of the skill. Mental practice can effect motor movements only as far as they are affected by cognitive skills. "Mental practice of these elements fosters subjects' retention of symbolized elements and their connections more so than for subjects denied the opportunity for mental rehearsal."⁵

Proposition II: "Mental practice effects are not just limited to early learning – they are found in early and later stages of learning and may be task specific." Most studies find that mental practice is most effective following some physical practice of the task.

In the early stages of learning, mental practice may give the performer a rough schema of the cognitive elements of the task and this could account for the mental practice effects in novice performers. With practice on the task, feedback from the muscles and senses develop the schema of cognitive elements more fully so that performance is enhanced for the mental practice group compared to the no mental practice group.⁶

Thus, mental practice may be effective for novices to the task, but it is most effective when the subject has had some prior physical experience with the specific task.

Proposition III: Many studies reveal that mental imagery or rehearsal of a task activates the muscles appropriate to that action; however, as Proposition III states, "It is doubtful that mental practice effects are produced by low-gain innervation of muscles that will be used during actual performance." For instance, a 1938 study for imaging singing, typing and playing a musical instrument discovered that muscle innervations

⁴Deborah Feltz and Daniel Landers, "The Effects of Mental Practice on Motor Skill Learning and Performance: A Meta-Analysis," *Journal of Sport Psychology* 5 (1983): 27.

⁵Ibid, 45-46.

⁶Ibid, 46.

were more general than localized. For example, if someone imagined typing with their right hand, then muscle innervations were found in not only the right hand and arm, but in the leg also. Many studies discount the psychoneuromuscular explanation and suggest that "...these minute innervations associated with mental practice are more general throughout the whole body or a whole limb."⁷

Proposition IV: "Mental practice functions to assist the performer in psychologically preparing for the skill to be performed." The muscle innervations that occur during mental rehearsal may be preparing the body for the actions and arousal that would occur during the physical action of the activity. These minor tension levels prime the body for the performing experience. "For example, extended mental practice of the relevant aspects of the task can also develop a capacity for narrowed or focused attention. This capacity can facilitate performance by occupying the majority of the individual's attentional capacity so task-irrelevant thoughts and images are prevented from disrupting the on-going priming of the muscles for action." In other words, by incorporating mental imagery immediately prior to a task or performance, one both narrows the attentional focus and prepares the muscles for the appropriate action.

The work of Feltz and Landers has significant application to organists who are interested in developing mental imagery and rehearsal skills. These findings indicate that mental imagery is most affected by temporal and spatial aspects of a skill. Timing is crucial to creative music making while spatial elements are especially significant to organists who deal with the issues of changing manuals, pushing pistons and adapting to new instruments. Many organists may find that mental rehearsal helps them more quickly learn these elements of playing the instrument. Mental rehearsal and imagery techniques may be applied by organists at all levels; however, imagery will probably come more quickly to someone experienced at the instrument than by a beginning pupil. A teacher may encourage and guide a beginning student in using mental rehearsal techniques by incorporating these methods into the lesson and instructing the learner to utilize them in practice sessions. Incorporating mental imagery may also assist the organist in preparing for the task at hand. Whether preparing for practice, studio class, concert, or competition, mental rehearsal and imagery immediately before the action may

⁷ Ibid, 48-49.

help the organist focus his mind on the task at hand, and prepare his muscles for accurate performance.

Mental Practice in Improving the Performance of College Trombonists

In 1985, Stewart Ross published the findings of an experiment that he conducted concerning various practice situations and their effect on the sight-reading of college trombonists. Ross utilized 30 trombone majors, both graduate and undergraduate, divided into 5 groups: physical practice, mental practice, combined mental and physical practice, mental practice with simulated slide movements and no practice. His study was based on sight-reading a thirty-four measure etude. First, each person played the excerpt in a pretest and received one point for each measure that was exactly correct in terms of notes, rhythm and articulation. Second, each group, except for the no practice group, was to incorporate their particular form of practice playing the excerpt physically, mentally, mentally with slides or combining the physical and mental practice. Those with no practice read a motivational article promoting strong sight-reading skills.

The combined mental and physical practice group improved the most from the pre-test to the post-test. They were able to use both the physical reinforcement necessary to learn a motor skill and the cognitive element that can analyze both the printed page and the physical movements. The physical practice only was the next most improved group, with mental practice simulation and mental practice close behind.

Although this was a significant study in mental rehearsal that can be applied to all musicians, it exhibits two limitations. First, this experiment only measured notes,

rhythms, and articulation, but not musical interpretation. Second, it did not measure the quality of mental rehearsal of those in the mental and combined practice groups.⁸

Organists are frequently called upon to sight-read hymns and anthems, and Ross's research could help one improve this ability by combining brief physical and mental practice when initially looking at a new work. If time for combining these techniques is not available, organists may also benefit from utilizing mental simulations, or miming through the motions of playing to prepare. In addition, mental rehearsal alone leads to greater accuracy in sight-reading than merely playing through the piece. Brief mental rehearsal gives the organist time to analyze meter, key, accidentals and rhythms. Vivid rehearsal to improve sight-reading should combine visual aspects along with the aural and tactile elements of the new work. In other words, while visually analyzing the piece, the organist must also hear the sound of the music in the inner ear and imagine the corresponding motions of the hands and feet.

The Use of Mental Imagery by Professional Brass Players

In an effort to determine the mental practice habits of exceptional brass players, William Trusheim conducted face to face interviews, lasting from twenty minutes to one hour with twenty-six brass players in five major American orchestras. He used probe questions in the areas of background and training, mentors, warm-ups, tone production, musical expression and interpretation, mental rehearsal, reduction of performance anxiety

⁸ Stewart L. Ross, "The Effectiveness of Mental Practice in Improving the Performance of College Trombonists," *Journal of Research in Music Education* 33 (1985): 223-229.

and conductor's imagery, or shared imagery. He listed from two to six probe questions for each category.⁹

One of Trusheim's most important discoveries was that nearly half of the players interviewed used their mentor as a powerful model and could recreate the mentor's sound in their minds. These mentors did not necessarily play the same instrument as the protégé, but the pupils gained influence from the art of their musicianship; the mentor's tone quality or interpretation may have inspired a performance goal for the younger artist. Many of the brass players stated that they remembered models of the sounds of a mentor and worked to recreate them. Several indicated that they could clearly hear several influential models and they combined the best aspect of these models to create their individual interpretation.¹⁰

Organists may also benefit from using models, both other organists and other musicians. One can learn a great deal by attending concerts or listening to recordings of artists who perhaps specialize in a particular type of literature, or who are simply well respected for their overall technique and musicianship. In addition, organists may also benefit by listening to musicians in other areas, such as orchestras or singers. By controlling such a great variety of tone colors and a large number of voices, the organist is often similar to an orchestra conductor. Like a conductor, the organist must focus on a particular part or parts at times, and manage expressive timing among several voices. Likewise, listening to the phrasing and emotive expression of a talented singer could influence the work of the organist in a lyrical piece.

⁹Trusheim, "Mental Imagery and Musical Performance: An Inquiry into Imagery Use by Eminent Orchestral Brass Players in the United States," 114-139.

¹⁰ Ibid, 161-165.

In Trusheim's study, many of the musicians interviewed also admitted to hearing the voice of or seeing the mentor giving advice or encouragement. Imagery provided by the mentor may have also played a significant role in the brass player's musical development. For instance, during a practice session, the musician may have heard specific phrases or images that a previous mentor may have provided during lessons or master classes.¹¹ Organists may also employ this technique within practice sessions, recalling phrases or images that a teacher employed in a specific piece. These specific images and ideas may be recalled for new, similar works or may lead to the development of other creative images and analogies.

Although Trusheim's paper does not provide any specific mental practice techniques, several of the brass players he interviewed indicated that they used a mental warm-up before rehearsal. These mental warm-ups allowed them to focus their minds on what they were communicating and visualize communicating that sound to the audience. Several players indicated that they would simply study the music and imagine the ideal tone quality and expression.

Organists do not have to consider tone quality in the same way that brass players do, yet organists also may discover advantages from including a mental warm-up before a practice session or concert. An organist can develop a mental image of specific sounds desirable for registering a piece and then experiment at the instrument to find the ideal sound. Tapping into the image of creating the ideal sound and then relaying that to the audience is an excellent technique for all performing musicians.

¹¹ Ibid, 161-168.

Mental Imagery and Conductors

In his 1984 article “The Triple Code Model for Imagery and Psychophysiology” which appeared in *Journal of Mental Imagery*, A. Ahsen discussed his template for mental imagery which combines elements of physiological and psychological aspects of imagery. Ahsen’s model is divided into three components: Image (I), Somatic response (S) and Meaning (M). These events may occur in any order. “The MIS configuration would seem most appropriate to current research in optimizing motor performance since the performers have a cognitive understanding of the task (M), then image themselves performing the task (I) and somatically respond in a manner congruent with the stimuli (S).”¹²

In 1984, Evelyn Bird incorporated Ahsen’s principles and studied the activation of an experienced conductor during the mental rehearsal and actual conducting of a symphonic overture. She found that a conductor’s electromyography (EMG) measurement, which measures electrical impulses in muscles, increased in correlation with tempi, dynamics, texture and rhythm in the music. In addition, EMG results of mental rehearsal could be more than three hundred percent over baseline, or relaxation, but that the mental rehearsal accompanied by music required only five percent to thirty percent of the actual level required in the physical performance.

There are several questionnaires that may be used to evaluate one’s imagery ability. Bird employed the Creative Imagination Scale and the Movement Imagery Questionnaire in the study of novice conductors. The Creative Imagination Scale

¹² This description of A. Ahsen’s Triple Code Model was summarized in Evelyn I. Bird and Vietta E. Wilson, “The Effects of Physical Practice upon Psycho-Physiological Response during Mental Rehearsal of Novice Conductors,” *Journal of Mental Imagery* 12 (1988): 52.

measures “responsiveness to suggestions to image” and “encourages free, spontaneous imagery.” The Movement Imagery Questionnaire requires one to make a small movement of the arm, leg, etc. and then immediately image that movement. This test evaluates a person’s visual and kinesthetic imagery ability.¹³

Bird’s experiment involved eight novice conducting students with an average age of thirty-six, along with their instructor, at a Canadian University. The study measured electroencephalograph (EEG), electrical impulses in the brain, as well as EMG after three weeks of the class, and after eight weeks of class. The researchers found that during the pre-trial, the participants’ heart rates increased significantly when engaging in mental rehearsal, but during the post-trial, their heart rates increased little during the mental practice period. These were most likely normal physiological responses to activation.¹⁴

Among the students, the EEG profiles were more similar at the post-test than the pre-test. The instructor had a strong similarity in EEG levels during the pre-and post-trials. This suggests that with an increase in physical practice and experience, the brain waves are more closely linked during physical and mental practice. An EMG in the deltoid muscle during pre- and post-trials correlated among the top three students in the class, but not with the others. The EMG profiles of the teacher had a significant similarity, indicating that more experience with a task yields more activation in the appropriate muscles during mental rehearsal.¹⁵

Bird’s study also discovered that in all but one of the novices, mental rehearsal trials were slower than the actual physical movement. This was true for the conductor at the first trial, but at the second trial, her rate of speed in imagery, was nearly the same as

¹³ Ibid, 53.

¹⁴ Ibid, 54-56.

¹⁵ Ibid, 57-59.

that for the actual physical performance. These results seem to indicate that a novice to a task may require imagery at a slower pace because he is not as familiar with the movements, whereas one who is very experienced at the task has a more advanced psychoneuromuscular patterning that allows imagery in real time.¹⁶

In conclusion, it is suggested that as a motor skill, such as musical conducting, is learned, MR (mental rehearsal) patterns of EEG and to a lesser extent EMG seem to develop and appear to mirror the actual performance. These learning patterns seem to be primarily cognitive in novices and may be followed by muscle patterning in more experienced performers.¹⁷

This study illustrates that in a complex task mental imagery will probably develop more quickly and naturally in someone who is more experienced with the activity. For instance, it is unrealistic to expect a beginning organ student to immediately have fluency in mentally rehearsing pedal solos or manual changes because these are relatively unfamiliar tasks to the learner. An advanced organist will have more ease in incorporating mental rehearsal than a beginner will have, simply because he is more familiar with the cognitive skills and muscular movements that organ playing requires.

Mental Rehearsal and Piano Performance

Donald Coffman conducted an experiment involving forty participants, comprising undergraduate and graduate students in music education and music therapy, who were proficient at piano but not keyboard majors. He divided these students into four practice groups: physical practice, mental practice, combined physical and mental practice, and a no practice control. Each practice group contained two sets, one which could hear what the passage of music should sound like and one which had no knowledge

¹⁶Ibid, 61.

¹⁷Ibid, 63.

of results. Coffman's research measured improvement of sight-reading similar to Ross' earlier study of trombone students. Each participant sat at a computer with an electronic piano keyboard and was required to practice straight through the work in their particular method, simultaneously with clicks of a metronome. The entire experiment lasted fifteen minutes. The subjects played half of a composition as a pre-test and then practiced and performed the other half of the composition as a post-test. They practiced six times for a thirty second time period, with a five second break between each trial.¹⁸

Coffman found that physical practice and physical practice combined with mental practice were equally as effective in improving piano performance in this experiment. Mental practice was better than no practice, but not as strong as either physical practice or the combination of physical and mental rehearsal. In this experiment, knowledge of results did not seem to have a great deal of significance.¹⁹ The results of Coffman's study could be applied to non-organ majors studying the instrument. Mental rehearsal need not be employed only by the most advanced players, even non-majors on an instrument may benefit from combining mental practice along with physical practice.

Musical Imagery and Expressive Timing Patterns

In 1998, Bruno Repp conducted a study to determine if finger tapping to an expressive timing pattern was as accurate with clicks, such as a metronome, as with the actual music. In addition, he also experimented to establish if finger tapping would exhibit expressive timing with imagined music. The experiment involved twelve

¹⁸ Donald Douglas Coffman, "Effects of Mental Practice, Physical Practice, and Knowledge of Results on Piano Performance," *Journal of Research in Music Education* 38 (1990): 194.

¹⁹ Ibid.

musically trained undergraduates and included three conditions requiring synchronized finger tapping: first with a sequence of computer-generated clicks, second with clicks and music simultaneously, and third with clicks and imagined music.

...the musical structure influenced the timing of the synchronized action, without participants' awareness. The very same pattern of deviations, albeit somewhat reduced in magnitude, emerged in the imagery condition. This proves that participants did imagine the music and that imagined music can have involuntary effects on the timing of accompanying motor behavior.²⁰

The results of this study suggest that expressive timing is possible, but perhaps optional, in the mind's ear. It takes a great deal of attention to create an imagined expressive performance, but it also may require imagined body movement. His experiments incorporated accuracy of finger tapping to measure imagined performance, but he suggests that perhaps this type of movement may inhibit imagined expressive listening. However, imagining the movements that go along with the pattern (at the organ or piano) may actually enhance the degree of imagined expressiveness.²¹

This study is unique in that it attempts to measure an expressive or creative element. Previous studies measured accuracy of notes and rhythms or muscle movements. Organists may apply this research by using aural imagery to experiment with expressive timing. Mental representations of music do not have to be in strict metronomic time. One might hear a passage in the mind different ways, allowing a variety of creative interpretations to develop. Perhaps this would allow the artist to have a variety of interpretations on hand and spontaneously choose one during the

²⁰ Bruno H. Repp, "Effects of Music Perception and Imagery on Sensorimotor Synchronization with Complex Timing Patterns," in *Annals of the New York Academy of Sciences: The Biological Foundations of Music, New York, New York, May 20-22, 2000*, by the New York Academy of Sciences (New York: New York Academy of Sciences, 2001), 409-411.

²¹ Bruno H. Repp, "Expressive Timing in the Mind's Ear," in *Musical Imagery*, ed. Rolf Inge Godøy and Harald Jørgensen (Lisse, Abingdon, Exton, Tokyo: Swets and Zeitlinger, 2001), 197.

performance. An organist might also enhance his sense of timing by hearing phrases in the mind's ear, both at and away from the keyboard.

Music Training and Aptitude for Imagery

A study published in 2000, by Andre Aleman, et al., established that individuals with musical training had a higher aptitude for aural imagery than did untrained musicians. This experiment involved thirty-five students enrolled at Utrecht University, aged twenty through twenty-two. The students were divided into a “musically-trained” group consisting of fifteen people (those who actively played an instrument and had at least 2 years of formal music training) and a “non-trained” group of twenty subjects. The subjects were given three tasks based on both a perceptual and imagery condition.

The first part of the study consisted of the musical auditory imagery task. Students viewed a short segment of text from a very familiar Dutch folk song and listened to the corresponding melody on a tape recorder. They were then asked if the pitch for one word is higher or lower than that for a second word. For example, if American students had been participating in this study, they may have been asked to analyze the pitch relationship in the phrase, “OH say can you SEE.” In the imagery section, the text was given but the tune was not. Musically trained subjects scored higher on both sections of this segment, but especially higher in the imagery portion.

The second portion of the experiment involved a non-musical auditory imagery task. Students had to identify out of three sounds which sound did not belong in the group. In the perceptual segment, they heard the sound, where as in the imagery segment, they were given verbal cues for the sound. For example, during the perceptual segment, the participants may have heard recordings of a car, a motorcycle and a snare

drum. During the imagery segment a proctor would speak the names of three objects, such as a telephone, a doorbell and a crying baby and the participant relied on a mental picture of the sound to determine which would not belong. Musically trained subjects scored consistently higher in both sections of this test.

The third segment of this research included a visual imagery task. During the perceptual portion, the subjects looked at three pictures and had to identify which item did not belong in the group. During the imagery portion, the words representing three items appeared on cards and by visually imagining each item, the participant would identify which did not belong. Each group scored nearly identical results for both perception and imagery. Aleman, et al., state: “The results suggest that music training may improve both musical and non-musical auditory imagery but not visual imagery, consistent with the evidence of temporal association cortical involvement in auditory imagery.”²²

This research leads one to conclude that all trained musicians, including organists, have a pre-disposition to aural imagery from their training, practice and experience. Musicians may tap into this ability, develop it and use it for a variety of benefits. Although this study indicates that musicians have no greater aptitude for visual imagery than others, one may find that with practice visual images begin to form along with mental aural representations.

In a separate study, Andrea Halpern indicates that the part of the brain activated during music perception is the same segment that is utilized during music imagery. Researchers have used positron emission tomography to measure brain patterns during

²² Andre Aleman, Mark Nieuwenstein, Koen B.E. Böcker, Edward H.F. de Haan, “Music Training and Mental Imagery Ability,” *Neuropsychologia* 38 (October 2000): 1665-1668.

perception and imagery tasks. These studies show that perception and imagery tasks activate the same sections of the brain. In addition, changing the size of the perceived and imagined objects also changes the brain's functions in similar ways. Although this research was actually conducted to study the brains of epilepsy patients, it also allows musicians to understand how and why aural imagery works. Halpern states, "...the right temporal lobe is an important mediator of musical imagery, as it has been shown to be for musical perception."²³

Halpern's research illustrates that the same part of the brain is activated when one imagines or mentally rehearses music as when one actually physically hears the music. When one is mentally rehearsing, the brain works similarly to when one is physically rehearsing. Incorporating mental rehearsal strengthens the brain's ability to lead the task, while allowing the muscles time to rest. This may be especially beneficial to organists who use such a great variety of muscles at their instruments; incorporating mental rehearsal could not only improve practice and performance but possibly also reduce the risk of overuse injuries.

Conclusion

A variety of imagery research in music, sports and other areas support the application and use of mental imagery to augment physical practice in these fields. Coffman summarizes the following conclusions in sport psychology research over the twentieth century:

1. Physical practice alone is superior to mental practice alone.

²³ Andrea R. Halpern, "Cerebral Substrates of Musical Imagery," in *Annals of the New York Academy of Sciences: The Biological Foundations of Music*, New York, New York, May 20-22, 2000, by the New York Academy of Sciences (New York: New York Academy of Sciences, 2001), 181-182.

2. Combining physical and mental practice is often more effective than using either alone.
3. Mental practice can benefit both the initial and later stages of learning; however, some prior experience with the task is necessary for successful mental practice.
4. The effects of mental practice are mainly related to cognitive, rather than physical, elements.
5. There are usually optimal time lengths for mental sessions; cognitive tasks seem to require less time and fewer trials than motor tasks.
6. Mental practice is useful to a wide variety of learners.
7. Imaging ability measured with imagery vividness tests can often predict the effectiveness of one's mental practice.²⁴

As organists apply these ideas to organ playing and music in general, they can use specific techniques to improve their learning speed and retention of music as well as increase their confidence in performing.

By applying the research into mental imagery, it appears that organists will gain the maximum benefit by combining mental rehearsal along with physical rehearsal. Mental imagery and rehearsal is not a substitute for physical practice, but can be an excellent way to augment practice sessions. This type of imagery and practice puts the mind at the forefront so that the brain leads the muscles and the music at all times. This could reduce the amount of time that one spends mindlessly practicing and increase the quality of practice sessions and performances. Combining mental and physical rehearsal yields a creative learning style that can be adapted to the needs of individuals and developed in an imaginative manner.

²⁴Coffman, "Effects of Mental Practice, Physical Practice, and Knowledge of Results on Piano Performance," 188.

CHAPTER 3: RELAXATION, CENTERING AND FOCUSED CONCENTRATION

Relaxation

The first step to vivid imagery is learning to totally relax the body. Complete relaxation allows one to eliminate external stimuli and become more aware of his inner state.¹ Muscle tension is a common concern among organists at all levels. The demands of the instrument produce tension in the neck, back, hands, arms and legs. Utilizing relaxation procedures eases the organist's bodily tension that can hinder the quality of practice and performance.

Progressive relaxation procedures date back to the turn of the twentieth century with the work of Dr. Johannes H. Schultz. Schultz, a German physician, noticed that anxiety deteriorated his patients' physical well-being and that hypnosis would alleviate this anxiety. He codified his work in a book written along with Wolfgang Luthe, *Autogenic Training*, which became available in the United States in 1959. Schultz's technique involves gradually relaxing each muscle of the body, making the arms and legs feel heavy and warm, controlling the heart beat and breathing, and feeling warmth in the center of the body and coolness in the forehead.²

In the 1920's Dr. Edmund Jacobson, an American physician, devised a technique which he labeled "progressive relaxation." This involves tightening and then releasing specific muscle groups, usually beginning with the feet, and moving progressively up the

¹Mike Samuels and Nancy Samuels, *Seeing with the Mind's Eye: The History, Techniques, and Uses of Visualization* (New York: Random House Bookworks, 1975), 106.

²Robert Nideffer, *The Inner Athlete: Mind Plus Muscle for Winning* (New York: Thomas Y. Crowell, Co., 1976), 160.

body. When organists adapt Jacobson's ideas, they learn to tell the difference between tension and relaxation in specific muscle groups and can identify unnecessary tensions both at the organ and in everyday life. Allowing the relaxed state to occur rather than forcing it is the key to successful relaxation.³

Another common relaxation technique is "auto-suggestion." In this practice, the person mentally gives himself a set of verbal cues. One thinks phrases such as, "My face and jaw feel relaxed." This type of imagery may also be helpful in visualizing a relaxing environment such as a beach or mountain area. One might think "I feel the breeze of the ocean. I smell the salty air and hear the steady sound of the waves." There does not have to be a specific memorized script; it is most important that the person simply understand the connotation of the words he is thinking.⁴

In his book, *The Relaxation Response*, Herbert Benson provides four essential elements for eliciting what he labels the Relaxation Response, "...an inducible, physiologic state of quietude."⁵ These are four simple steps that could greatly benefit busy organists if incorporated into their daily routine. First, one must have a quiet environment, such as a room or worship space where there are no external distractions. Second, one must have an object upon which to dwell. This can be either a symbol (such as a cross), or a phrase. Some may think of a simple syllable, others may think of a phrase from a prayer, or meaningful hymn. A simple statement, such as "I feel calm and peaceful," may also be effective. The third step in attaining the relaxation response is a

³ Samuels and Samuels, *Seeing with the Mind's Eye*, 106.

⁴ Ibid, 106-7.

⁵ Herbert Benson, *The Relaxation Response* (New York: Avon Books, 1975; reprint, New York: HarperTorch, 2000), 9.

passive attitude; one must empty the mind of all thoughts and distractions. When stray thoughts enter the mind, they must be disregarded and simply allowed to pass away. It is also important to avoid analyzing how the relaxation is progressing. “A passive attitude appears to be the most essential factor in eliciting the Relaxation Response.”⁶ Finally, a relaxed state requires a comfortable position; one may sit, kneel, or lie down. Sitting in a comfortable chair may be the most effective. If lying down, one must avoid falling asleep, because relaxation and sleep are two different states.⁷

Relaxing unnecessary tension is the first step to incorporating mental imagery and rehearsal into one’s organ practice. When first beginning to incorporate mental practice into the music learning process, it is most effective to begin mental rehearsal and imagery when not involved in the activity. In the early stages, mental rehearsal is typically more vivid and efficient when preceded with relaxation. Mental rehearsal should remain passive; that is why the relaxation portion is so important. The learner must notice, “...in a passive and objective way, his/her own performance and feelings.”⁸

Herbert Benson and Robert Nideffer suggest setting aside ten to twenty minutes each day for relaxation and imagery. An organist who is a novice to mental practice could benefit from this brief amount of time daily. One may find it difficult to sit or lie still for even five minutes initially, but with practice the organist will be able to increase the amount of time spent in focused relaxation and imagery. The session should begin with some form of relaxation exercise to quiet the mind and body, relax the muscles and increase awareness of any tension. After the body is relaxed, one can picture himself practicing a very familiar piece. At first, this can be imaged as if the learner is watching

⁶Ibid, 130-131.

⁷ Ibid.

⁸ Nideffer, *The Inner Athlete*, 206.

a movie; seeing himself from the audience's perspective. By looking from this angle, one may notice extraneous movement or tension in the playing and can later become aware of this in physical practice. Next, one should imagine playing from an internal perspective, noticing every detail of the performance. One should think about how the muscles feel when playing this particular piece, what the keys feel like (wood, plastic, ivory), and what the room and wood smell like. This mental rehearsal should also incorporate the feel of pushing pistons and utilizing expressive timing in the music. While engaging in mental practice, one of the most important elements is hearing the music and all of the accompanying nuances in the inner ear.

The learner should also be aware of positive and negative tension and aim for deep breathing and a relaxed state during the exercise. If paying careful attention to the imagery, one will most likely feel muscle activation when imagining the movements of playing. When this tension occurs, the participant should inhale deeply and imagine relaxing the muscles on the exhale.

In her article, "Tension in Piano Playing: Its Importance and Dangers," Carola Grindea strongly supports the incorporation of mental rehearsal for the piano performer. Many of her ideas for pianists directly relate to organists as well. She suggests that the performer lie on his back and play through the pieces in his mind, imagining that he is giving a successful performance. At places of anxiety or intensity, he may notice inner tightening, especially in the diaphragm. It is effective to go back through these places, exhale, and practice letting go at the areas that produce inner or visible tension.⁹

⁹ Carola Grindea, "Tension in Piano Playing: Its Importance and Dangers," in *Tensions in the Performance of Music* (London: Kahn & Averill, 1978.; reprint, New York: Pro/Am Music Resources Inc., 1995), 112, (page citations are to the reprint edition).

When utilizing mental imagery, it is very important to imagine past successful performances or practice sessions. Past successes are the foundation upon which future successes are built.

Centering

Centering is a means of calming the body and channeling a musician's focus and energy to the task at hand. Sports psychologist Robert Nideffer created this technique for athletes. Don Greene, a sports psychologist who has coached the U.S. Olympic diving team as well as musicians at the Julliard School and members of major orchestras throughout the United States, has adapted the idea of centering to suit musicians. Centering allows the performer to shift from critical, verbal thinking to creative, musical thinking. Greene states, ".....you can picture what you want to do, get a feeling for how you are going to do it, and hear the sound that you'd like to create."¹⁰

Don Greene provides the following guidelines for "Centering Down" in his text, *Performance Success*.

1. "Form your clear intention." Precisely state a goal, for example: "I am going to learn how to center down" or "I am going to carefully practice pedal exercises for ten minutes."
2. "Pick your focus point." Don Greene suggests choosing a focus point that is below eye level, because having the eyes closed or lowered is more conducive to right brain activation. This can be difficult for organists, especially if playing on an instrument with four manuals with a high music rack. This could be a good defense for playing from memory or at least only referring to the music occasionally.
3. "Close your eyes, focus on your breathing." When first learning to center, it is important to first close the eyes, later one will be able to do this by just lowering the eyes and focusing gently. The learner should concentrate on breathing from the diaphragm rather than the upper chest. Breathe in through the nose and out from the mouth for three to seven breaths, until entirely focused on breathing.

¹⁰ Don Greene, *Performance Success: Performing your Best under Pressure* (New York: Routledge, 2002), 40.

4. "Scan for excess tension and release it." With each inhale, one must scan the body for tension from the head to the feet. At the exhale, release the tension.
5. "Find your center." The center of gravity in one's body is about two inches below the navel and two inches into the body. The learner must maintain the center of gravity to the chair, or bench as he centers. During times of stress, the sensation of one's center tends to rise and the goal in centering is to keep the center of gravity at the proper location.
6. "Repeat your process cues." Process cues are concise, "supportive directions" that help the learner focus on his goals once successfully centered. This phrase should be a specific cause phrase, not an effect. For example, when beginning a Bach Sonata one might think, "Clear articulation," or before beginning Vienne's *Berceuse*, one would think, "rolling legato." These phrases might be instructions the organist has heard from a teacher when working on a particular piece in a lesson.
7. "Direct your energy." Energy must be gathered at the musician's center and then directed through the body to a specific focus point. If these steps are taken thoroughly the organist will access the right brain and will be able to accomplish the performance goal.¹¹

Green recommends that as one is learning to center, this process should be practiced three to ten times a day. Eventually, the musician should be able to do this in one to two breaths. This can be incorporated during practicing, centering each time one begins working on a different piece, during performance class and eventually quickly, but thoroughly, during a performance.¹²

Nideffer suggests that to practice centering, one should sit in a chair and breathe deeply, and on each exhale imagine sinking further and further into the chair. The participant should come up with a number that represents how close he feels to the chair. For example, if on the first exhale he feels a four, he must maintain the four on the inhale and increase the proximity to the chair to a six on the exhale. The number should increase on each exhale, but maintain the relaxed state on the inhale.¹³

¹¹ Ibid, 41-47.

¹² Ibid, 47.

¹³ Robert Nideffer, *Athletes' Guide to Mental Training* (Champaign, IL: Human Kinetics Publishers, Inc, 1985), 61-62.

After the process of centering has been mastered, it can be incorporated during performance of a composition. Nideffer indicates that one can center during a time when motor movements are automatic, or when a task is so simple that it does not require total concentration; however, the complexity of organ playing makes the latter almost non-existent.

For an organist, an ideal time to center might be before a piece or movement of a composition, as well as prior to a difficult passage, such as a pedal solo or extremely virtuosic manual passage. For example, when playing the Bach D Major Fugue, BWV 532, one typical thought before the final pedal solo might be, “I hope I don’t miss any pedal notes!” Instead of thinking of a left brain criticism, centering and accessing the right brain can provide a more accurate, rhythmically stable performance, provided the physical practicing has been efficient.¹⁴

Once “Centering Down” has been mastered, it is important to learn how to “Center up.” This may allow an organist to play with more vigor and energy especially when worn down with the fatigue and stress of daily life. After learning to center down, centering up should be quite simple and take twenty seconds or less.

1. “Form your clear intention.” The organist must determine a specific performance goal and where he will channel the additional energy. Greene gives the example of the statement: “Tonight I will be energized and give an exciting and inspiring performance.”
2. “Pick your focus point.” Just like centering down, one must choose a focus point that is beneath eye level. However, the eyes should remain open and the learner must exhibit a “hard focus” on that point.
3. “Start rapid breathing while pumping hands.” The musician will now inhale and exhale through the mouth while rapidly opening and closing the fists. He must do this for three or so breaths, but be careful to stop before hyperventilating or feeling dizzy. He will next continue with a more natural breathing in and out of the mouth.

¹⁴ Ibid, 62.

4. "Release upper body tension." The third step probably resulted in some upper body tension; focus on releasing this tension while also scanning the body for any other tight areas that need to be released. This should be accomplished in one to three breaths.
5. "Be at your center." The organist will next focus on the center of gravity and direct energy to that area.
6. "Repeat your process cue." The musician should employ an exciting phrase and repeat it until he feels energized.
7. "Direct your energy to your Point." Bring the energy from the center up to the focus point and then "Go for it!"¹⁵

The process of centering and achieving body balance is important for all musicians, but it seems especially applicable to organists where balance is of prime importance for strong rhythm, confidence and accurate playing. Carola Grindea provides an exercise for body balance that can augment the process of centering for organists. Initially, the organist, in playing position, with hands placed on the keyboard, should direct his concentration to his head, trying to find its point of balance when it is "sitting" loosely on top of the spine. The player should experience the sensation of his head becoming weightless, with the spine gently pulled upwards.

Next, a long exhalation, acting on the diaphragm, loosens the shoulders, back and neck, while the arms also hang loosely. The player should slowly oscillate the arms until they have become weightless and the upper part of the body feels so light as if it were not there. At this point the organist should direct his attention to his ankles, imagining them very loose. He should be aware of the most extraordinary sensation, that of his whole body becoming light, almost floating in space as if the force of gravity had lost its power. All that is left - and this invariably happens - is to *smile*. Any residue of tension at the back of the neck miraculously disappears through this natural physical act.¹⁶

¹⁵ Greene, *Performance Success*, 98-100.

¹⁶ Grindea, "Tension in Piano Playing", 109.

Practicing a freedom in breathing is one of the most effective ways to reduce mental and physiological tension. Grindea suggests the following exercise: Breath in slowly, counting one, two, hold the breath without tensing the body for the count of four, and finally breath out slowly to the count of two.¹⁷

Careful attention to breathing is imperative during both practice and performance. Tension frequently affects the natural rhythm of breathing and may cause a performer to hold the breath. One may find it effective to exhale at certain parts of a piece, especially before a particularly difficult passage. When one exhales, an inhale always follows naturally, but if one inhales, tension may cause breath holding. One should focus on breathing only during practicing; during the performance one should just exhale from time to time and the inhale will come naturally.¹⁸

Concentration

Performers who consistently achieve optimal and peak performance have a high degree of mental quiet. This is a state in which concentration remains steady, avoiding any external interruptions. Within this focused status, the performer lets the physical movements and the music flow freely; however, this mindset can be interrupted by internal criticisms and external distractions.

When performing, if something irrelevant or distracting enters the musician's mind, Greene suggests that he ask himself if this is relevant or irrelevant. One should not try to force the mind onto the task at hand, simply think "irrelevant" and pay the distracting thought no mind.¹⁹

¹⁷ Ibid, 108.

¹⁸ Ibid, 110.

¹⁹ Greeme, *Performance Success*, 70-71.

In order to work on improving concentration, the organist can practice letting the mind wander and attend to where it goes. One should allow the focus to naturally broaden and narrow. Practice letting concentration happen naturally. If one constantly strains to concentrate, he is actually defeating the purpose.²⁰

Constructing a personal boundary may be helpful in eliminating outside noise or distractions. This boundary could start off as an imaginary circle around the organist and the instrument, keeping any audience, teacher, judges, etc. away. No one or nothing can enter the circle and distract the performer from concentrating on creating music; however, the sound and interpretation go through the boundary, inspiring the audience. The boundary could evolve into a ring of fire, a rainbow, a moat, or whatever specific image proves most beneficial to the individual.²¹

If a performer has great problems with distracting thoughts during performance or practice, it might help him to play through a piece and afterwards write down all of the thoughts that came into his mind. For example, thoughts concerning one's job, personal issues or everyday tasks may intervene and decrease the quality of the performance or productivity of the practice session. When the musician takes note of the distracting thoughts and analyzes the list, he realizes how mundane and irrelevant these thoughts are, and it may help him disregard these items as they arise in the future.²²

In their text, *Seeing with the Mind's Eye*, Mike and Nancy Samuels provide excellent exercises for improving concentration. They have taken exercises from Yoga practice that can be used by anyone to improve their concentration. For example, they

²⁰ Dorothy Harris and Bette Harris, *The Athlete's Guide to Sport Psychology: Mental Skills for Physical People* (Illinois: Leisure Press, 1984), 88.

²¹ Greene, *Performance Success*, 71-72.

²² *Ibid*, 74.

suggest sitting still, and focusing on one object for the total of one minute. Notice the size, texture and all details of the object. When the mind wanders, bring it back to the object. Most people are surprised at how much the mind wanders in the period of just one minute. Practicing this technique can improve both the quality and quantity of one's concentration.

Another technique to improve concentration is counting breaths for a few minutes. One should breathe deeply, counting the number of breaths that he takes. When distracting thoughts enter the mind, the learner can do one of two things: Cut them off in mid-sentence and go back to counting or simply acknowledge the thought and let it pass.²³

Music improvisation therapy is an additional means of improving concentration during practice and performance. This encourages performers to listen intently to their inner sound and emotions. In her book, *Toward the Zen of Performing*, Dorita Berger stresses that for musicians the key to concentration is focused listening. She also states, "A healthy mind-set is one which is present all the time, not just onstage. Therefore, working toward attaining a stilled mind in order to live fully in the moment of music – especially for the performer who often repeats the act - can achieve a revised way of thinking in daily life."²⁴

Focused listening and concentration are essential for successful organists. In *Performance Success*, Don Greene identifies three elements to singular focus: awareness, attention and concentration. Awareness requires the musician to recognize

²³ Samuels and Samuels, *Seeing with the Mind's Eye*, 112-114.

²⁴ Dorita Berger, *Toward the Zen of Performance: Music Improvisation Therapy for the Development of Self-Confidence in the Performer* (Saint Louis: MMB Music, Inc., 1999), 38.

the sensations of the external world and his body. For the organist, this entails keen observation of the instrument and hall, as well as sensitivity to excess tension in the muscles and the physiological effects of performance anxiety.

Attention may be defined as focusing one's awareness to a certain place. There are four types of attention required in a musician's practice and performance. First, broad external attention indicates noticing the entire room and all that is going on within; this could be very distracting in a performance situation, but may be useful in vivid mental rehearsal of the performance. Second, narrow external attention involves the musician focusing outside of himself on a specific element. This can be very helpful in accompanying, when the organist must focus on the conductor's beat. Third, broad internal attention requires that one notice all that is going on internally, especially areas of the body that might be holding tension. Fourth, narrow internal attention is focusing singularly on one muscle group or thought inside one's self. The best performers easily shift between each of these varied elements of attention.

Finally, successful music making requires a high degree of concentration. Concentration involves a high duration and intensity of focus. It may be retained during certain parts of a performance, but the majority of a performance will require the attentional elements listed above.²⁵

Thought Stopping

One of the most distracting elements of a musician's concentration is the presence of negative thoughts. Many athletes use the technique of "thought stopping" to eliminate

²⁵ Greene, *Performance Success*, 75-78.

both distracting and negative thoughts. When an organist experiences an irrelevant or unproductive thought, he should briefly attend to the thought, say “stop” out loud and clear his mind. Initially, the musician must decide if he truly desires to eliminate a certain thought pattern. Next, he should select a particular thought that he really wishes to extinguish. Then the individual should close his eyes and try to imagine the situation in which the negative thought generally appears. Finally, he should practice interrupting the anxiety-producing thought until it is eliminated entirely. This process may take much time, focus and practice; however, the reward will be a decrease in negative thought patterns and distractions to concentration.²⁶

Nideffer promotes thought stopping and other techniques in his text, *Athletes' Guide to Mental Training*. Performances by both athletes and musicians can often become something that is totally automatic, and when a musician's body goes on auto-pilot, the mind has room to criticize, doubt and lose the train of thought. This is a common phenomenon that can be detrimental to performing.

Tension usually increases in response to negative thoughts. Replacing these with positive thoughts can be more productive. In order to move away from negativity, Nideffer explains that one needs “... to find the right buttons to push. These buttons are images and sensations that are associated with positive emotional feelings.”²⁷ When encountering negative ideas or fatigue, a musician should activate a thought-stopping process. This involves putting a red light on the thoughts, centering, redirecting to positive ideas and sensations and visualizing a green light for the positive thoughts to proceed. A musician should discover phrases, such as a positive mantra (“I feel strong

²⁶ Harris and Harris, *The Athlete's Guide to Sports Psychology*, 120.

²⁷ Nideffer, *Athletes' Guide to Mental Training*, 85.

and I radiate confidence.”²⁸ “I play with clarity and strength.”), or emotions one can conjure to combat negative thoughts during performance. One must become aware of self-defeating phrases that interrupt constructive thinking and replace negative thoughts with positive ideas and feelings.

In addition, it is beneficial for an organist to remember a time when negative feelings or thoughts prevailed during a performance. One must accept those feelings and then rationalize them. For example, if an individual were playing a piece and thought “I always miss that note,” then of course the hand is going to tense up and miss the note. If the musician analyzes why, perhaps he could change that thought to, “Relax the hand” and gain more precision in the next performance. Musicians must also set realistic goals and accept that performances are not always going to be one hundred percent perfect.²⁹

Self Talk

In addition to thought stopping, self talk is another technique that top athletes incorporate into their training and performance. This technique is beneficial for organists and all performing musicians. Positive self talk can greatly increase confidence and thus decrease arousal and anxiety immediately prior to a performance. If one experiences a dry mouth, cold hands, nervous stomach or other such physiological annoyances before performances, the individual may think, “I hate this feeling and I’m not going to do well.” The performer can reframe this, however, and think, “Great, I always feel this way

²⁸ Malva Freymuth, *Mental Practice and Imagery for Musicians* (Boulder: Integrated Musician’s Press, 1999), 95.

²⁹ Nideffer, *Athletes’ Guide to Mental Training*, 85.

when I perform my best.” It is important to take bothersome or negative self thoughts or talk and put a positive spin on them.³⁰

Harris and Harris also provide four guidelines that promote positive attitudes. First, it is not the performance, the audience or the judges that make one anxious, it is the performer. Athletes and musicians create their own anxiety and positive thoughts mitigate this stress. Second, the performer must think realistically. Performances are rarely perfect and musicians should strive for an optimum performance, not a perfect performance. Third, any performer will feel the way he thinks, therefore if he desires to change his feelings, then he must first change his thought patterns. Finally, every human is fallible, and it is imperative to keep experiences within a realistic thought of accomplishable goals.³¹

In order to keep negative thoughts at bay, it is important for the organist to identify situations that yield negative thoughts or cause self doubt. This could involve something like playing from memory. For every single negative thought, come up with two positive thoughts. For example, if the individual thinks, “I am afraid that I will forget that passage.” Instead, he should think, “I am a bright person with a strong memory.” “I focus solely on relaying the music.” Also, when performing or practicing, it is helpful to use cue words that keep the musician in the moment and allay negative thoughts. These cues might involve phrases such as “stay centered,” “relax your hands,” “listen to the melody in the pedal,” etc. Finally, it is beneficial for a musician to keep a journal to record negative thoughts, analyzing when they occur and determining positive affirmations one can use to keep them at bay. One can employ positive affirmation

³⁰ Harris and Harris, *The Athlete's Guide to Sports Psychology*, 116.

³¹ *Ibid*, 121.

statements for both practice and performance. Some general helpful statements are, “I live for the present,” “I am relaxed,” and “I believe in my abilities.”³²

In 1987, a study by Steptoe and Fidler labeled a variety of types of self talk that are common among performers. Those with stage fright would think of catastrophic statements, such as “I know I am going to faint” or “I know that I am going to mess up that passage.” The most beneficial type of self talk is referred to as, “realistic self appraisal” with comments such as “I will probably make a few mistakes, but the important thing is relaying the music.”³³

Attention training is an effective method of increasing the quality of performance. This type of cognitive therapy requires identifying negative and task-irrelevant thoughts during a performance and replacing them with positive self-talk.³⁴

Relaxation, centering and concentration are the building blocks for employing successful mental rehearsal. Once the organist is proficient in these areas, mental imagery and rehearsal can be employed both at and away from the instrument to augment physical practice and enhance the quality of one’s practicing and performing.

³² Karlene Sugarman, *Winning the Mental Way* (Burlingame, CA: Step Up Publishing, 1999), 172.

³³ Wilson and Roland, “Performance Anxiety,” in *The Science and Psychology of Music Performance: Creative Strategies for Teaching and Learning*, ed. Richard Parncutt and Gary E. McPherson (Oxford [England], New York: Oxford University Press, 2002), 51.

³⁴ *Ibid*, 53.

CHAPTER 4: MENTAL IMAGERY AND REHEARSAL TECHNIQUES

Imagery Development

As the previous chapter identified, imagery can best be developed when first practiced under non-stressful circumstances. Many sports psychologists advise athletes to combine relaxation and imagery techniques so that muscles are released and external distractions are at a minimum while imagery is rehearsed. Organists can benefit from this advice as well. A musician should first practice mental imagery and rehearsal in a quiet place away from the instrument, but these techniques can later be incorporated into practice and performance. Some musicians may have more of a natural aptitude for imagery than others. Just as learning a musical instrument requires regular practice, engaging in vivid mental rehearsal and imagery demands consistent repetition.

When first beginning to employ imagery techniques, most people feel that they sense an image in the mind rather than actually mentally visualizing it. In their text, *Seeing with the Mind's Eye*, Mike and Nancy Samuels provide many excellent exercises for increasing imagery vividness. One should begin with observing a two-dimensional shape, such as the picture of a triangle, noticing all details of the image. Then he should close his eyes and imagine the image as vividly as possible. Next, he will compare the actual triangle with the mental representation. An illustration of the triangle may be found in appendix A.

Increased practice leads to visualizing three dimensional objects, such as an apple. One should look at the actual fruit and study all of the details. Then the individual

should visualize the fruit thinking of it from different perspectives. For instance, one would imagine what it would be like to paint the fruit, noticing details of color and shading, or to eat the apple, imagining the smell, taste and texture of the fruit.¹

Exercises of this type could also lead to more creative music making. Looking at objects in a variety of different ways could encourage perceiving music in various ways, yielding different interpretations of a single passage both musically and technically. For example, an organist can look at a piece of music from the viewpoints of the performer, composer and audience. When analyzing the music from the performer's standpoint, one considers appropriate technique and personal details concerning timing and interpretation. If an organist analyzes a work from the composer's standpoint, he considers the type of instrument the composer would know or have known, what registrations would be appropriate, as well as the composer's intentions pertaining to details of articulation and interpretation. An organist could look at a work from the audience's viewpoint by making a recording of a performance, and then listening to the recording as if he were in the audience. This is an excellent way to analyze whether the performer's musical intentions are coming across to the audience and to recognize the mood or emotions of the work from the audience's perspective.

When considering how an organist might interpret a single work in a variety of ways, one might take into account the example of Bach's *Prelude in C Major*, BWV 547. If looking at this piece from different aspects, the organist might try it with a quick, lighthearted mood utilizing clear, bright registration based on eight foot pitch. The individual could also consider this with a firm, bold interpretation employing a slower

¹ Mike Samuels and Nancy Samuels, *Seeing with the Mind's Eye: The History, Techniques, and Uses of Visualization* (New York: Random House Bookworks, 1975), 121.

tempo and heavier registration, perhaps based on sixteen foot pitch. Mental imagery must always remain flexible and open to new and better ideas concerning both musical and technical elements.²

When developing imagery ability, one should first decide upon an external or internal perspective, then practice imaging from one point of view. After proficiency is gained in one perspective, then the musician should switch to the other. An organist should initially practice imagining himself perform as if he were in the audience. He will then imagine what it feels like to be at the organ playing, noticing all details of the experience, body position, muscular contractions, emotions, etc. The individual must practice the two perspectives independently at first; later, they can be combined. One experienced in imagery can quickly shift from an internal to an external perspective.

The musician must decide in advance on one element upon which to focus. This can be incorporated with centering and setting up a “process cue,” a simple phrase or word that summarizes the immediate performance goal. For instance, an organist must decide if he is going to focus on a single element such as muscle tension, precise notes, expressive timing or piston changes.³

If imagery does not come naturally, one can begin by physically performing the task sequence and then imagining what it feels like to continue. For example, the organist can take one passage of a piece of music and physically play it. In order to increase the vividness of kinesthetic imagery, one could practice playing slowly, perhaps with separate hands or feet alone. Since it is often easier to hear the sounds of a piece of

² Malva Freymuth, *Mental Practice and Imagery for Musicians* (Boulder: Integrated Musician's Press, 1999), 28.

³ Robert Nideffer, *Athletes' Guide to Mental Training* (Champaign, IL: Human Kinetics Publishers Inc., 1985), 46-47.

music than to feel the muscular motions, slow practice of manuals and pedals separately can enhance the vividness of kinesthetic imagery.⁴ After the learner has physically played the passage, he can move away from the keyboard, close his eyes and begin to imagine the movements. It may even help the beginner to continue miming with his fingers and feet until the mental representation becomes secure.

External cues can also assist one with both visual and kinesthetic imagery. The organist should sit at the bench of the instrument at which he is practicing or performing, taking in the location of all pistons, stops and pedals. One may make slight movements at this point in the imagery, such as changing manuals or pushing pistons. The individual can also use cues from the audience's perspective by watching a video tape of the performance or by listening to a tape of his performance and imagining what it is like to be in the audience.

The musician should then listen to the piece of music without worrying about what it feels like to perform it. He must simply listen to the piece of music, a recording of himself or someone else, that he is rehearsing and consider the emotions or visual images that come to the mind from the music alone.⁵ A visual sense can be enhanced by letting one's mind create its own movie out of the music. The learner should imagine colors, actions, scenes, or images that come alive when hearing this music.⁶

When initially learning a skill, external imagery may be the most efficient technique. For example, a beginning organ student may benefit most from external imagery because he is not familiar enough with the muscle movements involved in playing the instrument to imagine them from an internal perspective. When a skill is very

⁴ Malva Freymuth, *Mental Practice and Imagery for Musicians*, 27.

⁵ *Ibid*, 48-49.

⁶ Barry Green, *The Inner Game of Music* (New York: Doubleday, 1986), 153.

comfortable and automatic, kinesthetic imagery may work more effectively. For an advanced player or a beginner, imagery and mental rehearsal work most effectively with consistent practice. Once an individual has done something over and over again both physically and in the mind, it becomes a “déjà vu” type experience.

When an action is imagined the central nervous system sends impulses in a pattern associated with that action. The stimulation that originated cognitively (by imagining) is manifested bodily in the neurological patterns generating low levels of muscular response. Using this strategy, you can practice what you have already learned in order to improve your performance or you can increase the speed of your learning by adding these additional mental practices.⁷

Mental Practice Techniques

Incorporating mental practice techniques into physical practice sessions may increase the speed and quality of learning organ music as well as increase organists' confidence and help them deal with performance anxiety. Freymuth advocates the use of a “three step practice loop” which involves mentally projecting an ideal sound, playing the passage and then analyzing how the physical performance matches or deviates from the ideal sound. This is an excellent technique which requires one to let the mind guide the music making and helps one avoid mindless repetition.

Freymuth also promotes relaxing muscles while engaging in mental practice within a physical rehearsal. This eliminates the incorporation of tension within the mental representation. Releasing tension allows one to build in feelings of relaxation and can make one more aware when tension enters into the playing. Intense ten to fifteen minute physical practice intervals that alternate with a few minutes of mental practice,

⁷ Dorothy Harris and Bette Harris, *The Athlete's Guide to Sport Psychology: Mental Skills for Physical People* (Illinois: Leisure Press, 1984), 99.

doing some stretches or self massage to get the blood flowing are beneficial to the learner. It is also advantageous to take a more extended break each hour.

When practicing the organ, postural alignment, proper breathing and relaxed muscles are imperative. When incorporating mental rehearsal, the learner's overall physical state is being remembered along with the music, so it is important to maintain a relaxed state during these portions of a practice session.⁸

Mental Leadership

In order to begin incorporating mental leadership, the organist must practice playing a simple example, such as a scale, hymn or exercise from a method book, for either manuals or pedals.⁹ When initially learning this technique, it is perhaps best to play with only the hands, or only the feet. While playing, the organist must focus on staying mentally ahead by thinking the sound and fingering, or pedaling, of the next note immediately before it occurs. Freymuth suggests thinking ahead with the value of an eighth note, but if playing slow note values, one could possibly think ahead by a quarter or half note. The main goal is to think ahead rhythmically in order to maintain strength in the meter. Initially the organist should think ahead by individual notes, then by measure and finally by phrase. This method encourages the organist to anticipate both musical and technical issues within a piece and can also enhance sight-reading skills. After the organist gains proficiency with simple scales or hymns, he can then transfer the process of mental leadership to specific pieces.¹⁰ This technique is an excellent way to make the mind guide the muscles and the music, rather than letting motor memory take over.

⁸ Freymuth, *Mental Practice and Imagery for Musicians*, 29-35.

⁹ *Ibid.*, 53.

¹⁰ *Ibid.*

Example 1

As the organist practices a simple scale, such as the following, he should use the small notes to quickly think ahead the pedaling for and sound of the next note, moving the foot to its next position as soon as possible. This promotes anticipating movement and sound while playing so that one is always preparing the body and mind ahead of the music.

Ex. 1

Enhancing Inner Hearing

External hearing involves hearing music that is on a recording or in a live performance or practice session. Inner hearing requires imagining the music in one's head. Practicing and teaching critical inner hearing is as important as utilizing and teaching proper technique and muscular patterns. Inner hearing ultimately guides interpretation and memorization, requiring that the mind lead the muscles rather than vice-versa. Developing a strong sense of inner hearing is essential to solid musical memory and creative, confident performances.

In their article, "Teaching Inner Hearing," Richard Van Auken and Paul Larson provide five concise steps for developing critical inner hearing. First, the learner must hear the music in his head. Rather than just practicing the music physically, it is efficacious for organists and other musicians to practice hearing their ideal mental image of the piece. Second, students must be guided to listen carefully to the imagined sound. This involves eliminating irrelevant thoughts from the mind and allowing the music to be at the forefront of their thinking. Third, the learner should then physically play what he heard in the imagination. This connects the mental image with the physical instrument. Fourth, the most challenging and probably the most important step is listening critically

to what one is playing. Finally, the learner should ask if the physical performance matched up with the mental performance. A thinking musician will determine in what ways the two were similar and in what ways they were different.¹¹

In teaching, students must be told where to guide their hearing. Van Auken and Larson suggest telling a student to “Listen to your mental image of the music.” Students may also be guided to “Listen to what you are playing.”¹²

In order to combine inner hearing with physical practice, one may employ the technique of “Delayed-Continuity.” Frank Merrick developed this idea in his text *Practicing the Piano* from 1958. He promoted the technique of thinking the sound of a phrase, then playing it. Thinking the next phrase and then playing, wherein each segment of silently thinking would last precisely as long as the imagined phrase. This is a mental rehearsal of phrases exactly in tempo immediately prior to the physical performance.¹³

It is important to not only hear the music, but also to incorporate the faculties of sight and motion as well.¹⁴ It may be prudent to begin doing this with a scale, hymn, or other simple composition and then work up to more advanced repertoire.

¹¹ Richard Van Auken and Paul Larson, “Teaching Inner Hearing,” *The American Music Teacher* (April/May 1998): 17-18.

¹² *Ibid*, 18.

¹³ Walter Andrew Goldreich, “References to Psycho-Physical Relationships in Piano Technique as Reflected in Twentieth-Century Writings about Piano Pedagogy” (DM doc., Indiana University, 1970), 102-103.

¹⁴ Freymuth, *Mental Practice and Imagery for Musicians*, 42.

Example 2

During the rests, the organist should think in rhythm the next phrase. In order to be effective, one must imagine the sound of the music as well as the feelings in and positions of the fingers, hands and feet. This process involves imagining precise fingering, pedaling and rhythm, all in real time.

Ex. 2a

This technique works especially well with pieces that consist of repeated patterns. In example 2b, taken from the last movement of Louis Vierne's *Symphony* Op. 14, No. 1,¹⁵ the organist should vividly imagine playing each consecutive grouping during the rests, then physically play the grouping. As proficiency increases, one can later imagine groups of eight, twelve, etc.

Ex. 2b

Inner hearing may also be enhanced by singing or humming the melodic lines or phrases as well as studying the score away from the instrument. One can analyze phrase structures, harmonies and cadential points away from the organ, making learning at the instrument more accurate and efficient. During this analysis, it is important to listen to

¹⁵ Louis Vierne, *Symphonie*, Op. 14, No. 1 (Melville, New York: Belwin Mills, [196-?]).

the music mentally. After the work is thoroughly studied, one must be able to hear the music as a whole in the inner ear.¹⁶

Miming

Frank Merrick also advocated “miming” or practicing on the surface of the keys for brief passages, as well as for entire pieces or programs.

Such practice, he says, makes your fingers more sensitive as to whether or not they are on the correct keys, and supplies more mental recreation of the playing. Stated more precisely, it is your mind that learns to sense more sharply whether you are playing the right notes, not your fingertips. In other words, this is a psycho-physical benefit of silent practice but here stated in physical terms.¹⁷

With the variety of physical demands in organ playing, this is an excellent method for efficiently improving organ technique for both beginning and advanced players.

In order to begin incorporating this technique, the organist should position himself comfortably on the bench and mime some of the motions involved in playing. The individual must feel the muscles in his legs as the feet move. The learner must also notice the level of the arms as they play on different manuals, being aware of the muscles involved in these motions. In addition, he should pay close attention to how the keys feel under his fingers, even sensing the difference between the feel of plastic and wooden keys.

The learner should next mime playing through some scales for manuals and/or pedal and then progress to a simple piece or hymn. It is important that one hear the

¹⁶ Carola Grindea, “Tension in Piano Playing: Its Importance and Dangers,” in *Tensions in the Performance of Music* (London: Kahn & Averill, 1978.; reprint, New York: Pro/Am Music Resources Inc., 1995), 109 (page citations are to the reprint edition).

¹⁷ Walter Andrew Goldreich. “References to psycho-physical Relationships in Piano Technique as Reflected in Twentieth-Century Writings about Piano Pedagogy,” 104.

music during the miming, and if one has difficulty hearing, he should play it normally once. While miming, the organist should notice and release any tension in the body.

Next, the learner should try to rehearse completely mentally, without any motion involved.¹⁸ He must think about the total sound of the piece, the exact placement and feeling of his hands and the movement of the muscles in his legs. He should also notice registration changes, manual changes and swell box manipulation, imagining what it is like to make these alterations.

Miming is especially effective when practicing large leaps in the hands or feet, manual changes and piston changes. At a challenging passage of this nature, it is effective to gently mime the actions, and then mentally rehearse the muscle movement. If one centers and relaxes before the mental representation, then the task will be learned with relaxed rather than tense muscles. This can both serve to prevent injury in the muscles and inaccuracies in the playing. This technique is especially helpful with beginning organ students. Learning to change keyboards and hit pistons can be especially daunting for someone new to the organ. Combining miming and mental rehearsal with the physical practice allows students to learn the motions involved in playing more quickly and easily. If at any time one has trouble with a mental representation, then the learner must go back to the actual physical playing.

¹⁸ Freymuth, *Mental Practice and Imagery for Musicians*, 48.

Example 3
From *Cantabile* by César Franck¹⁹

In Example 3a, one can mime moving the hands from the Positif and Récit to the Grand Orgue to achieve a smooth, solid transition.

Ex. 3a

In Example 3b, the organist can mime the octave movement between the two circled notes, making sure that the first note is released gently and the horizontal arm movement is accurate.

Ex. 3b

Verbal Cueing

During organ lessons, a teacher may give verbal suggestions while a student is playing, such as “play legato,” “articulate before the downbeat,” etc. In the early stages of incorporating verbal cueing, the learner should write cues in the score based on what the teacher stated in lessons. When practicing, the organist should verbally speak these cues aloud, and later mentally think the instructions. To integrate this technique into one’s practicing, an organist must choose a passage of music that is new or relatively

¹⁹ César Franck, *Cantabile* in *Organ Works* (Mineola, New York: Dover Publications, Inc., 1987), 128.

unfamiliar. The individual should look through the passage and locate challenging spots and how they can be successfully executed. For example, one might write instructions in the score, such as, “stretch hand to High C” or “gently release last note.” The organist will play through the segment speaking these instructions as he plays, then go back through and just hear the instructions in his head.²⁰ Then the learner will abbreviate these cues to one word, for example, “relax”, “stretch”, “gentle,” etc.

Example 4

From *Berceuse* by Louis Vierne²¹

When playing this example, one would think phrases such as “rolling legato,” “reach up to the F#,” “open swell pedal,” “close swell pedal,” etc.

Ex. 4

Verbal cueing is also an effective technique for practicing piston or stop changes.

The organist can verbally cue himself by initially speaking aloud, then later simply thinking, the number of the piston, or name of the stop that should be employed at the appropriate time.

²⁰ Ibid, 54.

²¹ Louis Vierne, *Berceuse* in *Twenty-Four Pieces in Free Style Book II* (Boca Raton, Florida: Masters Music Publications, Inc. 1991), 28.

Modeling

Teachers often model for their students, and it is important that the student not just watch and listen at this time, but be encouraged to imagine the feelings associated with the technique. It is also effective to listen to a recording while imagining the physical motions of playing. In this manner, the aural representation is integrated with a focus on kinesthetic imagery. This can be helpful when following the score, but especially when playing from memory.²²

In his article, “Mental Practice and the Musician: A Practical Approach to Practice,” Ricky Wynn Brooks suggests that the use of a live or recorded model is inversely effective with age and experience. He believes that younger or less experienced musicians exhibit greater improvements with use of a model than do older or more experienced musicians.²³ One must also consider the negative effects of having a novice rely on models or recordings. If a young organ student begins to listen to recordings before experimenting musically on his own, or with a teacher, the recordings may become ingrained in the learner’s inner ear and restrict further musical development. However, experienced musicians may use dependable recordings to help detect rhythmic or note errors more quickly, or to gain insight into a variety of musical interpretations.

Barry Greene suggests that a learner imagine that he is a specific performer and then play a piece as he believes that performer would – letting go and allowing the music to transform his character. For example, an organist might imagine that he or she is a greatly admired performer such as David Higgs, or Marie-Claire Alain. If one imagines

²² Ibid, 55.

²³ Ricky Wynn Brooks, “Mental Practice and the Musician: A Practical Approach to Practice,” *Update* 13 (1995): 7.

playing with their confidence, interpretation and accuracy, it can enhance the learner's own confidence and abilities.²⁴

Creative Images

Many teachers use analogies and creative images with students to elicit specific moods or emotions within a piece of music, or to influence technical issues, such as touch. One might use the idea of gently moving water to evoke a legato sound or the sound of popcorn popping for a crisp, detached touch. Images such as these and other ideas can be effective in lessons, practice sessions and performance.

Light is a common image used to inspire musicians. During performance or practice one might imagine the sun radiating toward the center of the body, providing warmth and energy to all of the limbs. Another image might involve using a circle of light, or even fire, around the performer to keep out distracting thoughts or noises.²⁵

It may also be effective to mentally create a movie or action that occurs in the work when listening to or playing a piece. Different themes may represent different characters. The organist may focus on this movie in his mind when playing in order to convey the life and character of a musical composition.²⁶

Sometimes music can evoke images, such as Scherzos and Fantasy pieces by Vierne that evoke nimble fairies or dancing elves. When practicing or performing, the organist should internally maintain these images and ideas throughout the work. When these ideas fill the mind of the performer, the audience indirectly gains insight into the musical character of a composition.

²⁴ Greene, *The Inner Game of Music*, 159.

²⁵ Freymuth, *Mental Practice and Imagery for Musicians*, 64-65.

²⁶ Greene, *the Inner Game of Music*, 153.

Organists can benefit by keeping a notebook of these images used for different pieces. The images for a particular piece may be useful in performing future works, or in conveying ideas to students.

If images do not come naturally, it may be helpful for the performer to think in terms of feelings. For example, in a majestic section, one might think, “I feel like a King/Queen.”²⁷ When playing a heavy section that requires arm weight into the keys, one might think, “My arm (fingers) feel like lead.” An exotic sounding passage might elicit the thought, “This sounds like a snake charmer, belly dancer, etc.” Most importantly, a creative musician is open to new images, accepts them and continuously tries to think of others.

Memorization

There are generally three different forms of accepted memory in music performance: aural, visual and kinesthetic. Aural memory involves hearing the music in one’s mind, both hearing a passage as it is physically being played and anticipating the sounds to come. Visual memory requires seeing in the mind’s eye the printed score, the keyboard, placement of fingers on the keyboard and what particular fingering or chord patterns look like. This also includes a visual analysis of melodic and harmonic patterns. Kinesthetic memory, often referred to as motor memory, depends solely on the muscles and is often the least reliable form of memory except in very brisk motor passages. Successful musicians employ a combination of aural, visual and kinesthetic elements when committing a composition to memory.²⁸

²⁷ Freymuth, *Mental Practice and Imagery for Musicians*, 79.

²⁸ Rita Aiello and Aaron Williamon, “Memory,” in *The Science and Psychology of Music Performance: Creative strategies for Teaching and Learning*, ed. Richard Parncutt and Gary E. McPherson (Oxford [England], New York: Oxford University Press, 2002), 167.

There are several piano texts that promote mental rehearsal to aid in memorizing piano music. In *Piano Playing* of 1908, Josef Hoffman advocated the use of mental rehearsal to securely memorize piano music. He instructed the learner to play through the piece or passage several times, then take a significant break and mentally recreate the sound. When there are gaps in the memory, the musician must consult the score. Next, he should return to working at the piano and consult the score several times in memory lapses. If needed, he should study away from the piano again, and repeat the process until the memory is solid.²⁹

In 1932, Giesecking and Leimer emphasized the incorporation of mental practice into memorizing piano music in their text, *Piano Technique*. These pedagogues advised students to silently read through a passage, visualize the score and the keyboard patterns, and then physically play the passage. They stated, “Rehearse the piece mentally. Practice away from the piano visualizing the score, visualizing the keyboard, and most of all *hearing* the music in your mind.”³⁰

As discussed in the earlier chapter on research into mental rehearsal, Grace Rubin-Rabsom promoted mental practice to aid in memorizing piano music in 1941. In studies involving advanced pianists, she determined that combining mental rehearsal with physical practice decreased the number of physical trials needed to learn a piece. In

²⁹ Walter Andrew Goldreich. “References to Psycho-Physical Relationships in Piano Technique as Reflected in Twentieth-Century Writings about Piano Pedagogy,” 17.

³⁰ W. Geisecking and K. Leimer, *Piano Technique* (New York: Dover, 1932; reprint, New York: Dover, 1972), quoted in Rita Aiello and Aaron Williamon, “Memory,” in *The Science and Psychology of Music Performance: Creative strategies for Teaching and Learning*, ed. Richard Parncutt and Gary E. McPherson (Oxford [England], New York: Oxford University Press, 2002), 178.

addition, mental rehearsal also yielded a high level of retention for memorized piano music.³¹

In *Keys to the Keyboard* (1950) by Andor Foldes, Foldes promoted the use of auditory, visual and muscular imagery to aid memorization. He believed that auditory imagery is the most important aspect of memorizing and performing from memory.³²

Mental rehearsal can be utilized in the initial stages of memorizing a composition. The organist can employ this technique both at and away from the organ. When initially learning a piece, visualization and mental rehearsal away from the instrument allow the organist to carefully analyze the formal structure, harmonic and melodic patterns of the piece. Thorough understanding of a work's structure from an analytical standpoint increases the speed of memorization.

When memorizing a phrase or short passage, the organist should play through the phrase looking at the score, then play through it mentally, with eyes closed, noting sounds and movements, and then physically play the passage from memory. This technique may seem time consuming, but it can make memory more solid and can allow the learner to memorize more quickly, because he is working with short, concentrated segments. It is imperative that the organist combine vivid aural, visual and kinesthetic images during the mental rehearsal.

When a composition is securely memorized, it is beneficial to mentally play the piece away from the instrument. This can be done sitting or lying down in a state of relaxation, or while on a walk or other monotonous activity. When practicing memory in

³¹ Grace Rubin-Rabson, "Mental and Keyboard Overlearning in Memorizing Piano Music," *Journal of Musicology* 3 (1941): 34-37.

³² Goldreich, "References to Psycho-Physical Relationships in Piano Technique as Reflected in Twentieth-Century Writings about Piano Pedagogy," 17.

this fashion, it is important to incorporate all of the senses, visualizing the score and location of performance or practice, imagining all piston changes and dynamic changes, and most importantly hearing the correct notes, phrasings and interpretations in one's inner ear. If there is a passage that cannot be heard internally away from the keyboard, then this is a passage that needs extra physical and mental rehearsal in order to be securely memorized.

Altering Tempos of Mental Rehearsal

The organist may benefit from varying tempos of mental rehearsals. Although once one securely learns a piece it is best to mentally rehearse at the final tempo, mentally rehearsing very slowly can be effective in the initial learning stages of a piece. This is especially effective in pieces that are highly complex and chromatic. Mental rehearsal reduces error in learning a chromatic work because the learner employs kinesthetic imagery and structural analysis during the mental rehearsal time. This also allows the organist to become aware of any excess tension or movement that may have gone unnoticed in a mental rehearsal up to tempo.

When the organist cannot yet play a piece at the final tempo, he can benefit from imagining the sound of the piece at the final tempo. This can aid in discovering ideas for interpretation and technique suitable for the piece at its final tempo.

Organists can also incorporate a "fast forward" mode of mental practice. In this technique, one can skim through the music much like speed reading.³³ It is effective to move quickly through simple parts, and mentally imagine transitions, prominent structural points in the piece, or especially challenging sections. This is an excellent way

³³ Freymuth, *Mental Practice and Imagery for Musicians*, 71-74.

to practice memory posts. One can scan through the music until reaching a memory post and then clearly imagine that segment, scan to the next post and so on.

Mental Practice with a Metronome

When learning a challenging piece of organ music, it is often beneficial to begin practicing slowly and then gradually play passages at faster tempos each day, using the metronome as a guide for speed. Problems can occur when working with a metronome if one is not especially cautious with rhythm. Slowing down or speeding up when getting off from the metronome can actually cause more rhythmic problems than it solves. When working with the metronome the organist will play with stronger rhythmic precision if he turns the metronome to the proper speed and mentally hears the passage at the tempo of the metronome before physically playing along with the machine. In fact, in *The Art of the Pianist* of 1911, Harriet Brower instructed musicians to listen to a metronome and hear the music, see the notes and think of phrasing, dynamics, fingering, etc.³⁴ This is an excellent way for organists of all levels to improve both rhythm and interpretation.

Mental Rehearsal of Expressive Timing Patterns

One of the most challenging aspects of making music on the organ is proper timing of phrases, especially in combination with accurate technique, proper manual changes, and precise piston alterations. Manipulating freedoms such as those utilized in early Italian or North German music, or those involved with music of the Romantic Era are often difficult for organists to execute with fluidity and imagination. One way to rehearse this is for the organist to hear the phrase in the inner ear, vividly hearing the desired freedoms. The musician should next play the phrase and then, incorporating the

³⁴ Goldreich, "References to Psycho-Physical Relationships in Piano Technique as Reflected in Twentieth-Century Writings about Piano Pedagogy," 21.

above-mentioned three step practice loop, analyze how the timing in the physical performance matched that of the desired mental performance. One can rehearse hearing the phrase in a variety of different ways and then analyze the physical performance and choose which timing pattern best serves the music. Most importantly, the organist must imagine, hear and visualize everything that is going on in the passage; technique, rubato and piston changes must all be mentally rehearsed as a unit in order to gain the maximum benefits.

In addition, an organist may improve his sense of expressive timing by hearing a passage in the inner ear and physically conducting the phrase simultaneously. This can be done at or away from the organ. This technique allows for expressive timing, yet the physical movement of conducting assures that the music is always moving forward. Once this sound model gets into the ear and the body the organist will successfully produce it at the instrument.

Mental Rehearsal for Building Confidence

Musicians often replay performances in their head reliving and magnifying mistakes that may have occurred in previous concerts. Mentally rehearsing successful performances can build organists' self confidence and improve their performances. If a musician cannot visualize himself successfully achieving a goal, then chances are he will never attain that aspiration; however, by mentally rehearsing a successful performance, one can gain greater faith in his ability to achieve that goal. Greene states, "Mental Rehearsal is one of the best techniques to use in preparing for Optimal Performance."³⁵

Imagining a successful performance can be done in seven simple steps. This takes about ten minutes and can be done lying down, or sitting in a chair.

³⁵ Greene, *Performance Success*, 52-53.

1. “Start with Centering.” The organist must form a clear intention of what he plans to achieve in this rehearsal. For example, the learner may imagine that he is playing a Bach Fugue cleanly with solid rhythm. He must imagine the physical location, sitting on the bench at the organ at which the performance will be taking place. With the eyes closed, he should focus on breathing deeply from the diaphragm and relaxing all the muscles in his body. Next, the musician must become aware of his center and state a significant process cue, such as “solid rhythm” or “clear articulation.”
2. “Focus on your Visual Reference Point.” This may be looking at the score on the music desk, or, if the organist is visualizing himself playing from memory it may be looking down at the keyboard. At this time, it is possible to rehearse from both an internal and external perspective. With an internal perspective one can imagine the muscle movements involved, the feel of the fingers against the keys, noticing in vivid detail the feel of wood, ivory or plastic keys. A musician can also rehearse from an external standpoint, such as watching a movie of his performance. The organist should imagine the audience’s perception of him looking confident and playing well.
3. “Have a Multisensory Experience.” The organist must imagine the feel of his muscles, the feel of the keys, the bench, etc. Sometimes even smells can come into play, such as the smell of the wood at the console. The individual must vividly hear the sounds of his successful performance.
4. “Imagine what you would like.” At this point, the musician imagines himself in an optimal performance. If everything is not perfect, he must simply keep moving and do his best.
5. “Correct your mistakes.” A performer may notice muscle tension when playing a certain passage. He should use this time to become aware of the tension and release it. If the organist imagines missing a pedal note, he must stop, rewind and imagine playing the note correctly. This should be repeated several times until the musician sees himself performing the passage successfully many times.
6. “Layer your Segments.” The organist should imagine each part of a performance in ten minute segments. For example, the learner might first imagine himself prior to the performance, warming up, or relaxing in another room. In the next segment, one might imagine walking out to the performance area and successfully performing the first piece. Next, the musician might spend ten minutes positively rehearsing the next piece and so on.
7. “Be Creative and Have Fun.” Organists must imagine achieving an optimal performance in a variety of settings, playing a wide variety of pieces.³⁶

Greene suggests further enhancing one’s use of mental rehearsal by physically performing a selection and then mentally rehearsing that piece several times. Following

³⁶ Ibid, 56-58.

the mental practice, the musician should return to a physical performance and then make note of the improvements.³⁷

Performance Arousal and Anxiety

Mental rehearsal and imagery techniques may also help organists reduce the negative effects of performance anxiety. Almost all musicians experience physiological nervous symptoms such as sweaty palms, dry mouth and racing heart beat prior to performances. This can be especially detrimental for organists who must not only be concerned with relaying the music, but also adapting to a new instrument.

Sports and music psychologists recognize states arousal and anxiety prior to performance. Arousal is defined as the “dynamic state of a person’s behavior, which can be conceived as a continuum ranging from deep sleep through extreme excitation.”³⁸

Anxiety is a meaningful situation which causes negative feelings to arise especially “when a negative discrepancy is perceived between performance demands and ability to meet these demands.”³⁹

Performances usually fit into one of three categories: sub-optimal performance: performing below one’s standards and capabilities; optimal performance: performing very well but perhaps not reaching one’s highest potential; or peak performance: achieving the ideal performance, near perfection. Optimal performance is what musicians should strive for when performing. Peak performance is a wonderful, yet rare, occurrence and provides a perfect template for reliving past successes.⁴⁰

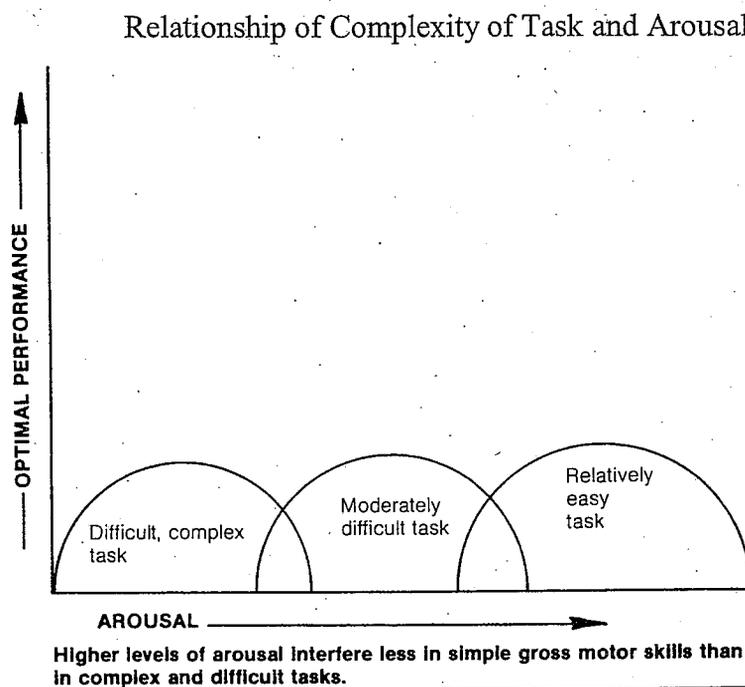
³⁷ Ibid, 58.

³⁸ Malva Susanne Freymuth Tarasewicz, “Variations of Sport Psychology on a Theme of Music: The Application of Sport Psychology Principles to Music Learning and Performance” (DM pedagogical project, University of Colorado, 1991), 19.

³⁹ Ibid.

⁴⁰ Greene, *Performance Success*, 15.

medium level of excitement is necessary for high quality performance; however, too little or too great an amount of nervousness reduces the quality of the performance. The Yerkes-Dodson Law further explains that more difficult tasks make the peak of the curve come earlier. In other words, more challenging tasks decrease in quality with a high level of nervousness, whereas simple tasks that require less focus may proceed successfully even with significant anxiety.⁴⁰ Organists must think about a great variety of items such as adapting to different instruments and rooms, pushing pistons, balancing on the bench, engaging all of the body physically, and still creating music. With the great challenges involved in organ playing, a performance will be most successful with a low to moderate level of anxiety.



Reprinted, by permission, from Dorothy Harris and Bette Harris, *The Athlete's Guide to Sport Psychology: Mental Skills for Physical People*, 40.

⁴⁰Wilson and Roland, "Performance Anxiety," in *The Science and Psychology of Music Performance: Creative Strategies for Teaching and Learning*, ed. Richard Parncutt and Gary E. McPherson (Oxford [England], New York: Oxford University Press, 2002), 50.

There are two types of anxiety: trait anxiety and state anxiety. “Trait anxiety can be defined as a chronic predisposition to being anxious, while state anxiety is only elicited under specific circumstances and is a transient mood.”⁴² Individuals with a high level of trait anxiety are more likely to also exhibit a high level of state anxiety. Individuals with a high level of trait anxiety perform best when material is mastered and the stress level is low. Those with a low level of natural anxiety are usually more adept at performing under pressure.

A behavioral therapy known as “systematic desensitization” may be beneficial to organists who experience debilitating performance anxiety. This process involves relaxation and imagining increasingly stressful performance situations. For example, an organist might imagine performing for a small group of friends in a practice room, then for a church service and finally up to a large solo recital. This allows progressive exposure to a “fear hierarchy.”⁴³

Standard Cognitive-Behavioral therapy involves relaxation techniques such as breathing awareness, progressive muscle relaxation, mental suggestions and imagery that produce the relaxation response, along with cognitive techniques. Cognitive elements involve accepting the state of anxiety and engaging in positive self talk.⁴⁴ For example, prior to a performance, the organist could utilize progressive relaxation for five to ten minutes and end with thinking of positive statements and affirmations about the concert.

⁴² Charles Spielberger, *Anxiety and Behavior*, (New York: Academic Press, 1966); quoted in Malva Susanne Freymuth Tarasewicz, “Variations of Sport Psychology on a Theme of Music: The Application of Sport Psychology Principles to Music Learning and Performance” (DM pedagogical project, University of Colorado, 1991), 21.

⁴³ Wilson and Roland, “Performance Anxiety,” 52.

⁴⁴ *Ibid*, 53-54.

Hypnotherapy is another means of possibly reducing performance anxiety. This requires an appointment with a trained therapist and includes relaxation, slow breathing, pleasant imagery such as mountains or the ocean, and verbal statements that link these images for mental control.

There are also a variety of alternative techniques that may calm musicians before performing. Alexander Technique, although not specifically developed to ease performance anxiety, provides a combination of verbal instructions along with posture realignment that may have benefits for the performer. Other techniques along these lines are Pilates, Yoga, Tai-Chi, etc.⁴⁵

Wilson and Roland identify four cognitive strategies for dealing with performance anxiety. First, the organist must view the anxiety as a normal state required for performance. Second, he should engage in positive self talk to divert irrelevant or negative thoughts and increase his self confidence. Third, the musician should utilize mental rehearsal and imagery by imagining all of the sensations involved in optimal performance. Finally, it is imperative that the organist set specific goals. Process goals involve setting goals for learning new works, improving technique or expanding interpretation. Outcome goals involve attaining a job or winning a competition. Process goals are the healthiest for anyone to focus upon on because they require one to concentrate on daily aspirations and achievement.⁴⁶ Many outcome goals are beyond one's control, while process goals will be achieved with diligent work.

A specific form of cognitive therapy is called *stress inoculation*. This technique requires identifying pre-performance physiological conditions such as sweating, dry

⁴⁵ Ibid, 54.

⁴⁶ Ibid, 55-56.

mouth, increased heart rate, etc. and reframing them in a positive light. Rather than allowing these states to hinder performance, an organist must realize that many of these sensations increase the body's energy and adrenaline flow which in turn create a more exciting performance.⁴⁷

In addition to cognitive therapies, there are five behavioral strategies that will assist organists in attaining optimum performance. First, the organist should engage in regular relaxation sessions; in order to relax under pressure, one must be able to relax in a normal state. Second, through experimentation one should come up with a pre-performance routine, such as exercise, a nap, specific foods, etc. that help him perform his best. Third, creating an anxiety hierarchy of performances that require no anxiety (0) to performances that require a great deal of anxiety (100) and then performing in these situations allows the organist to build up to stressful performances. This could be especially helpful for a beginning student, providing him with a graduated level of situations. Fourth, all musicians should adapt a supportive lifestyle that includes healthy eating, sufficient sleep, a balance of work and play in one's life and regular exercise. Finally, organists should aim for a flow state when performing. Wilson and Roland state, "Flow is the state in which performers perform to their optimum, the experience of which is usually described by the performer as exhilarating."⁴⁸ One of the most important aspects of flow is a balance between the skill and challenge. The task should be sufficiently challenging to the performer during both practice and performance without going beyond his level of skill. The organist must have clear goals in both practice and

⁴⁷ Ibid, 53.

⁴⁸ Ibid,58.

performance, continuously looking for feedback, analyzing the work and discovering improvements for future performances.⁴⁹

In addition to cognitive and behavioral strategies that focus on a musician's whole lifestyle, another method of working through performance anxiety issues is music improvisation therapy. This technique may ease a musician's technical problems, fears and performance anxiety. Dorita Berger, a music therapist and improvisation specialist, encourages clients to improvise in a variety of moods and emotions in order to release feelings that may have earlier been blocked by admonitions of teachers, parents or colleagues. The emotions discovered through these improvisations can later be transferred into repertoire.

Berger identifies two elements that may hinder optimum performance: Emotional inhibitions and conditioned attitudes that get in the way of the emotive communication of the music as well as mental blocks that she refers to as the "battlefield attitude." This attitude involves emotional and physiological blocks that hinder the expectation of a positive attitude and get in the way of both technique and interpretation.

Emotional and physiological blocks are often thought of as a unit, but really are separate entities. A musician may be completely emotionally involved in the music and technically unable to convey the interpretation due to performance fears. On the other hand, one may easily perform technically in front of an audience but communicate no emotive or interpretative message.⁵⁰

⁴⁹ Ibid, 57-58.

⁵⁰ Dorita S. Berger, *Toward the Zen of Performance: Music Improvisation Therapy for the Development of Self-Confidence in the Performer* (Saint Louis: MMB Music, Inc., 1999), 28.

In *The Athlete's Guide to Sport Psychology*, Dorothy and Bette Harris list helpful steps for mental rehearsal of a sports performance which are pertinent and easily adaptable to the demands of organists. An organist should visualize a performance exactly as it will happen. For example, if one is imagining the first piece in a recital, he should visualize himself in what he is wearing, walking from a back room up to the organ, hearing applause, bowing and getting onto the bench. It is important to imagine all of this in real time; the neurological system is more responsive if all imagery occurs in real time. If one is working on a new piece, the imagery may need to slow down in order to facilitate the unfamiliar notes and patterns.

The organist must imagine all possible dimensions of the performance, being especially attentive to process cues and focus points. He must be aware of smells, sounds such as coughing or programs rattling in the audience, as well as the tempi of movements, touch, etc.

Performances are rarely ever perfect, and all musicians must accept that and allow for this within the imagery process. An organist should not imagine making technical or other mistakes, but should imagine his recovery from it. For example, hitting an incorrect piston is a common mistake when playing an unfamiliar instrument. The performer should not necessarily imagine hitting a piston incorrectly, but should imagine the successful recovery. The same can be effective for technical mistakes. It may be more detrimental to performances to visualize errors than it is beneficial to visualize successes; however, in the imagery process, the organist must see himself playing with fluidity no matter what unplanned events happen.

One can use mental imagery to help prepare for practice sessions as well as performances. Musicians should imagine goals and process cues for practice sessions. One can visualize himself succeeding in the goals and achieving a focused practice session. This can save time as it will most likely add quality to one's practice time and reduce the quantity of time needed. The organist should again imagine in real time, perhaps even referring to a metronome if he is mentally rehearsing a piece of music.

If an organist is truly vividly visualizing a piece of music, he will sense slight muscle movements in line with what he is visualizing. For example, if the individual is mentally rehearsing a pedal passage, he should feel muscle movements in the ankles, knees and quadriceps.

If one is able to get a video tape of a performance that was especially successful, the musician should watch it carefully and become acutely aware of the feelings in that great performance. This will make the performer more likely to recreate that experience. It is important that the musician begin to re-experience a successful performance as soon as possible after it has occurred. The performer will be much more likely to remember the sensations that he associated with this success.

One can practice mental imagery anywhere, while driving, walking, jogging or any other monotonous activity. When learning a piece from memory it can be especially helpful to hear the piece away from the instrument. If there is a section that one cannot easily imagine, then that is a passage that needs additional physical and mental work. Mental practice can also be successful as the individual is going to sleep, however, one does not want to become so anxious that it makes rest difficult.

Mental imagery can both be done while sitting still or walking through the task. One might mime the movements of a particular passage without actually putting forth the energy of playing. This can save muscles fatigue and tension during a long practice session.⁵¹

⁵¹ Dorothy Harris and Bette Harris, *The Athlete's Guide to Sport Psychology: Mental Skills for Physical People*, 102-105.

CHAPTER 5: CONCLUSION

Closing Summary

Organists and other musicians should continually aim for optimal performances, striving to do their best, yet realizing that live performances are rarely ever perfect. Employing relaxation techniques as well as mental rehearsal and imagery can improve one's chances for achieving an optimal level in all performances. Incorporating mental methods assures that the mind stays ahead of the body, thinking beforehand about both technical and musical issues. Initially, one must spend a great deal of time to develop mental imagery and rehearsal techniques, but the time yields improved quality of concentration and focus, thus saving practice time in the long run.

Mental rehearsal should never be considered a substitute for physical practice. As many studies throughout the twentieth century have shown, the combination of physical and mental practice is superior to either form alone. There is certainly no substitute for physically engaging the muscles in practice, but mental rehearsal enhances the cognitive and spatial elements of a task and also allows time for theoretical analysis of the music. Taking time out for mental rehearsal during the physical practice session has the added advantage of giving the muscles time to rest before reaching a fatigued state. This could lengthen the amount of time one is able to practice and help eliminate over-use injury such as tendonitis or Carpel Tunnel Syndrome.

Prior to engaging in mental rehearsal and imagery, one must exhibit proficiency in relaxing the body. This has many benefits for the musician. Relaxation reduces stress, blood pressure and anxiety while it increases awareness and concentration. The ability to

relax helps a musician not only in practice and performance, but it also improves his quality of life.

Focused, deep breathing is another element related to relaxation that musicians often take for granted. In times of anxiety or tension, people have a tendency to hold the breath or breathe in a shallow manner. By concentrating on breathing during practice, one can develop good habits for performance. The brain requires oxygen to function properly and deep breathing has the advantages of feeding the brain and relaxing the muscles. In addition, when one focuses on breathing, the mind is unable to focus on negative or unnecessary thoughts.

As a musician employs relaxation techniques, he also improves his concentration and attention. This allows one to practice and perform in a focused state of mind. In this mode, all irrelevant thoughts vanish from the mind, and the organist focuses solely on the music. In the event that unnecessary or negative thoughts do interrupt, one may employ thought-stopping or self-talk techniques to eliminate these distractions. In order to have the most benefits during practice and performance, musicians must engage in focused concentration at all times during daily life, not just when making music.

Mental rehearsal and imagery are most effective when they are extremely vivid, involving all of the senses. Organists must be aware of muscular sensations, sights, sounds, smells and tastes in great detail in order to benefit from mental imagery. One of the most important elements of mental rehearsal is that one relaxes the muscles before practicing mentally. The brain memorizes muscular tension or release along with the mental representation of the music.

Mental rehearsal and imagery methods may be employed at the organ during physical practice sessions with exercises that enhance inner hearing, promote mental leadership, strengthen rhythm and influence expressive timing. One may also employ mental rehearsal and imagery away from the instrument imagining a passage of music and all of the senses that it involves. This is an especially effective way to reinforce memory or reduce performance anxiety.

Unfortunately, there is no specific cure for performance anxiety; it is an issue that all performing musicians must face. Optimal practice will lead to optimal performance, thus organists who practice efficiently will most likely worry less about their performances than those who do not. Setting process goals for each practice session and combining mental and physical rehearsal during the session will yield successful results and efficient use of practice time. It is also important for the organist to remember successful performances and frequently recall the feelings associated with these experiences, as well as vividly imagining successful performances in the future.

Most performers will be able to control, but not completely eliminate the physiological symptoms associated with performance anxiety. It is important to reframe this state, understanding that these signs provide excitement and energy to the playing and can serve to help, rather than hinder the music. Engaging in deep breathing and relaxation exercises prior to a performance as well as including positive affirmations and self talk may all help to calm a performer and prime him for the proper mindset that optimal performance requires.

Whether dealing with performance anxiety or individual practice sessions, organists must always be open to new images or forms of mental rehearsal. By

employing basic mental rehearsal and imagery techniques, individual organists may find additional methods that work better, or some that are entirely ineffective. It is important to share these ideas with colleagues and students; all can learn from one another. One might also consider writing down newly discovered mental practice techniques or effective images in a notebook or journal. These ideas can then be applied to other pieces or used for teaching.

Although not the focus of this document, other alternatives such as Alexander Technique, Feldenkreis Technique, Pilates, Yoga, Rolfing Movement, or Aston Patterning improve postural alignment which leads to more relaxed muscles and freedom in the mind. Balance and postural alignment are extremely important issues for organists and many could benefit by investigating one or more of these techniques.¹

Ideas for Further Research

Many more studies could be conducted dealing with the use of mental rehearsal and imagery and its benefits for musicians. One could conduct an interview or questionnaire of organ professors and how they incorporate mental imagery and rehearsal into their teaching. It would also be interesting to find out how these images and methods are conveyed and reinforced to students. One would likely discover a plethora of new ideas and techniques in this process.

A similar research project might involve interviewing significant concert organists and exploring how they utilize mental imagery and rehearsal in both practice and performance. There would undoubtedly be ideas and methods not explored in this

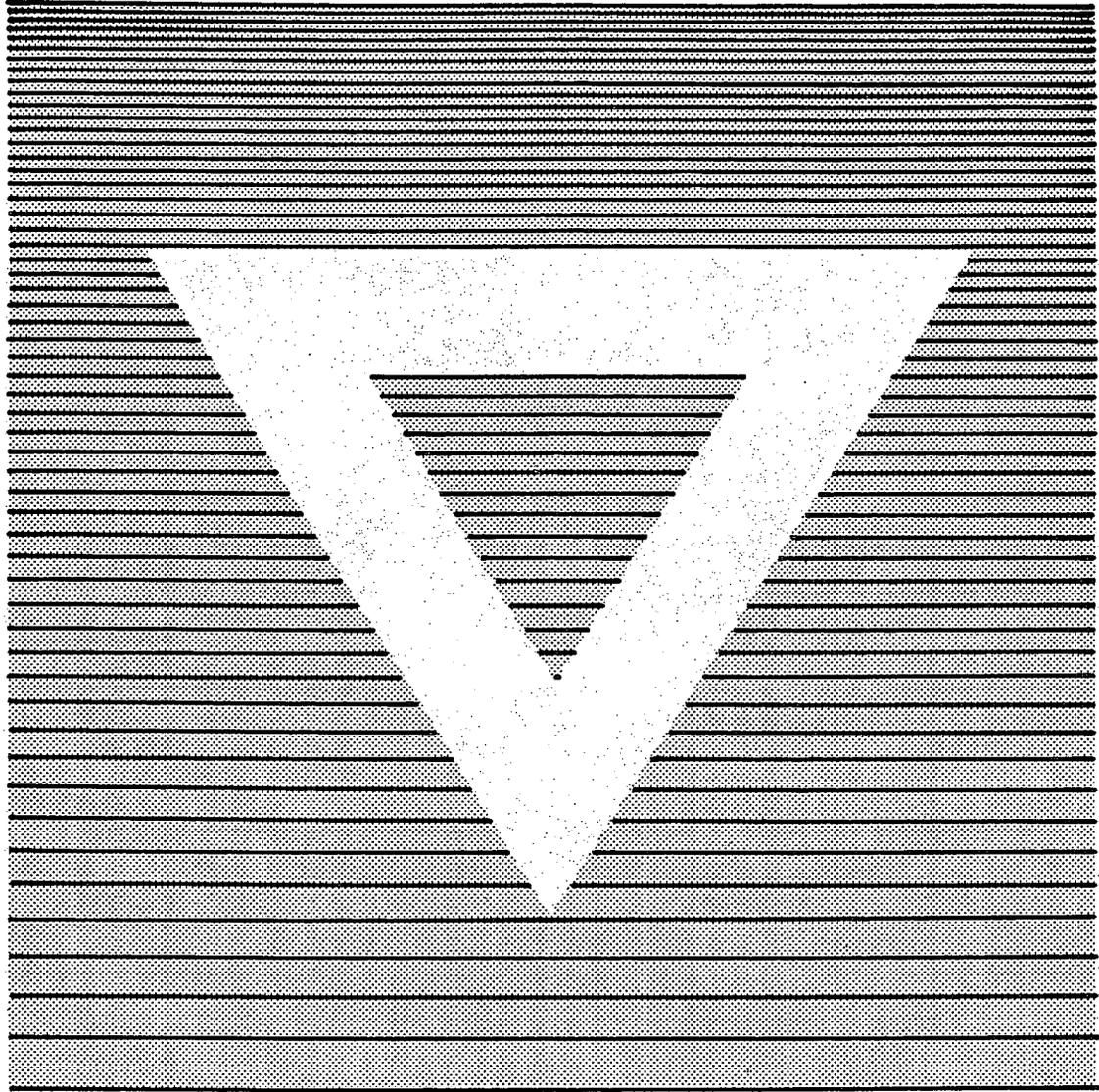
¹ Malva Freymuth, *Mental Practice and Imagery for Musicians* (Boulder, CO: Integrated Musician's Press), 35.

paper. This could greatly expand the gamut of available mental rehearsal techniques for organists.

The majority of research into mental rehearsal and imagery has involved sight-reading or utilizing the techniques for a very short amount of time. Studies could also be conducted that evaluate the effects of mental practice over a longer period of time. Obviously, musical growth is impossible to measure quantitatively. One can measure correct notes and rhythms, but that is merely an accurate rendering of musical notation, not the creation of music. A researcher could perhaps give learners basic instruction on imagery, utilize an imagery questionnaire and then have the learners incorporate combined mental and physical practice over a semester or a year. Measurement could be made on a scale of how the musician and their teacher, or coach, believe that they improved both technically and musically.

This is a growing field that deserves further research and exposure. These techniques can benefit organists and all musicians in their musical, personal and professional lives resulting in more efficient use of practice time and higher quality performances.

APPENDIX A: INITIAL VISUALIZATION EXERCISE



The triangle is a simple geometric shape that is often used for a first visualization exercise. The neutral gray background corresponds to what most people see when they close their eyes. The wide white line stands out in sharp contrast. Illustration by Susan Ida Smith.

Reprinted, by permission, from Mike Samuels and Nancy Samuels, *Seeing with the Mind's Eye: The History, Techniques, and Uses of Visualization*, (New York: Random House Bookworks, 1975), 120.

APPENDIX B: IMAGERY ENHANCEMENT EXERCISES

Exercise 1: Relaxing and Controlling Imagery

1. Sit down, become calm and relaxed, and focus on your breathing.
2. Be aware of how your body feels as you inhale and exhale, feel your body become warmer, heavier and looser with each breath.
3. Passively pay attention to any thoughts that come into your mind and then let them go. Bring your mind back to your breathing.
4. Imagine that you are in a relaxing natural environment; this place may be the beach, mountains, lake or anywhere that elicits peace and comfort.

Exercise 2: Seeing Colors, Controlling and Changing

1. Close your eyes and imagine a block of color, such as red or blue. Zoom in, until your visual field is covered with the chosen color, then zoom out again until the patch of color disappears into darkness.
2. Change the color and repeat.
3. This exercise trains you to visualize color and control movement in your mind's eye.

Exercise 3: Controlling an Image, Learning to Keep the Mind Attending to an Image

1. Visualize a very familiar organ console.
2. Examine every detail of the console, including the grain of the wood, the material of the keys, the details of the stops, etc.
3. Try to keep the imagery static; don't let your mind wander to imagining yourself playing the instrument; simply examine and notice every detail of the organ itself.

Exercise 4: Experiencing Touch, Taste and Smell Through Imagery

1. Imagine picking up a lemon. Notice the texture and coolness of the skin, as well as the slightly oily feeling.
2. Imagine smelling the lemon, taking a bite out of it and tasting the bitter juice.
3. Look at the lemon from as many different perspectives as you can imagine.

Exercise 5: Experiencing Environmental Detail

1. Imagine a room in which you have an upcoming performance.
2. Notice all the details of the room from ceiling to floor, including light fixtures, color and texture of the chairs, the floor material, color and texture and anything else you may observe.

Exercise 6: Improving a Skill

1. Imagine playing a brief phrase or passage of a piece that you are currently learning.
2. See and feel yourself playing this passage better than you ever have before.

3. Repeat the mental rehearsal and each time, imagine your self performing it more fluently.
4. Pay close attention to the aspects of the passage that need improvement and make these alterations in your imagination as you mentally rehearse.
5. If possible, after mentally rehearsing the passage, engage in physical practice. If the passage is still not solid, go back to mental practice. You will probably improve more quickly when you alternate between these mental and physical practice periods.

Exercise 7: Eliminating Errors

1. Select a passage of a piece within which you have been making errors during practice or performance.
2. Imagine yourself playing the passage without the error precisely as you would like to perform it.
3. If the error continues in your mind's eye, imagine seeing another performer play it who would perform the segment fluently.
4. Use this performer as a model in your imagination, then see and feel yourself performing just as you imagined the model did.
5. Continue to practice this until you can imagine playing the passage repeatedly without making any mistakes. Practice this segment of music as soon as possible after successfully completing the mental exercise.

Exercise 8: Keeping a Performance Notebook

1. One of the best exercises to increase your awareness and to develop cues for mentally rehearsing prior to successful performances is to record these events in a journal.
2. Document all cues regarding how you felt, what you thought about and how you prepared physically as well as mentally.
3. Write down all of the procedures that you followed hours or days prior to your best performances.
4. Follow these steps for practice sessions, studio class performances and solo concerts.
5. It is best to notate these observations immediately following a successful performance while these details are fresh in your memory. It may also be useful to notate something that did not work, so that this activity or thought can be improved or eliminated before the next performance.

Adapted from Dorothy Harris and Bette Harris, *The Athlete's Guide to Sport Psychology: Mental Skills for Physical People* (Illinois: Leisure Press, 1984), 110-112.

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