BODY CONSCIOUS: A COMPARATIVE STUDY OF BODY AWARENESS AND BODY ALIGNMENT METHODS FOR SINGERS AND FOR TEACHERS INTEGRATING THEM INTO THEIR TEACHING

by

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ABSTRACT

The purpose of this document is to research and discuss the necessity of body alignment and awareness required to enhance a singer’s vocal technique. The science supporting proper alignment and awareness provides evidence for the importance of this area of training. Research presented in this document compares several of the most popular awareness and alignment methods. These methods include yoga, Alexander Technique, the Feldenkrais Method, and Pilates. Each method’s founding principles and their applications to singers is explored.

All of the chosen methods have aspects that complement singers’ training. However, it is difficult to draw any conclusions on the effectiveness of these methods because clinical medical research is limited. There has been an increase in public awareness of alternative body training methods and an increase in clinics geared towards the special needs of performing artists. However, there is a lack of research into body alignment and awareness methods for musicians, especially singers.

An overview of medical research in body alignment and awareness is presented. This overview includes voice and posture research found in publications such as the *Journal of Voice*. The medical research available on these methods with non-musicians is also included to provide more information on each method’s effectiveness.

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The researcher asked professional voice teachers to participate in a survey to ascertain if and how they use these methods in their teaching. The results of this survey confirm that teachers are aware of various methods and often use them with students and their own practice. Alexander Technique and yoga are shown to be the most popular methods. The survey includes a section of open-ended questions about using these methods in lessons. The answers reveal that many teachers use variations of the presented methods because of their limited training. This information points to a lack of availability for training in these methods for voice teachers. More access to classes or availability to work with teachers who have these specialties as well as a performing arts background would be beneficial. Further research might include cataloguing the number of teachers who have training in mind-body methods along with a vocal training background.
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Singers are never separated from their instruments. Every aspect of their lifestyle from diet to leisure activities may affect their sound. A singer must be highly attuned to changes in his or her voice and body in order to sing well, and teachers spend large amounts of time working on breath management and vocal resonance. Before any of these areas of vocal training can be fully mastered, a singer must have control over his or her body. Not only must a singer have proper body alignment to allow for efficient breathing and ease of vocal production, but he or she must also be aware of changes in body alignment during singing in order to make adjustments. Posture or body alignment issues seem like easy adjustments to make, but I have observed many students struggle against their bodies. I have wondered why we, as singers, often cannot maintain good body alignment consistently while singing. The problem is more complex than merely “standing up straight.” The way we carry ourselves and stand on a daily basis becomes a part of who we are. Bad postural habits become our ‘normal’ stance and attempts to suddenly change these habits in one thirty-minute or hour a week lesson are challenging. A more correct posture may feel awkward or even uncomfortable for a student. Instructing a student to watch him or herself in the mirror simply to monitor the body can stir up strong feelings of self-consciousness. Certainly, work on body alignment and body awareness takes a good deal more effort than I expected, and it is still a challenge for me at times as I find myself wanting to slip into old habits.
Maintaining good body alignment for singing is an essential part of vocal technique. The body functions best under certain conditions, and, in turn, the singer functions better both physically and psychologically. Proper alignment allows the body to release unnecessary tension and allows the singer to engage functions, like breathing, without using excess energy. The vocal instrument’s vibrator and resonators function optimally under certain conditions as well. The ease of phonation and ability to tune the resonators is dependent on the elimination of unnecessary tension and proper alignment of the body. In addition to the effect of unnecessary tension on efficient breathing and vocal function, it may also cause the singer to quickly fatigue. Finally, the typical singer experiences many stressful situations, such as performances, important rehearsals, and auditions. Proper body alignment can lead to more self-confidence and poise under these stressful situations. Many teachers agree that good posture communicates confidence. Directors have commented that they know immediately when singers enter the room for an audition whether they want to hire them based on how they carry themselves.

Good postural alignment for singers is not static. It is a dynamic process, and the correct postural activity from one moment to the next may change based on how the singer is feeling or if the singer is in a recital or staged production. A singer’s body awareness and alignment becomes even more crucial in staged performances, such as opera. The focus on the singing actor increasingly dominates the performance field, and singers must find ways to sing well even in compromised body positions. As the singer’s body must continually change and move, he or she must develop a strong sense of self or body awareness to maintain proper form. Heinrich

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3Ibid., 34.
4Ibid.
Neuhaus, a well-known piano teacher, wrote that correct action can only happen on the basis of correct thinking. A singer’s physical movements must be supported by a heightened sense of awareness in order to strengthen the musical technique.

These postural and body awareness factors combined with the physical and mental pressures placed on singing artists were incentives to compare some of the most popular methods of body awareness and alignment. Yoga, Pilates, Alexander Technique, and the Feldenkrais Method will be discussed along with each method’s founding principles and their applications to singers. This study will take a brief look at changes in medical science pertaining to the performing artist. Publications such as the Journal of Voice and Medical Problems in Performing Artists are drawing attention to the importance of medical science understanding the needs of singers. I will discuss some of the available medical research on body posture and awareness in singers as well as the effectiveness of these mind-body methods in different populations. Investigation into the above methods of body awareness and alignment may spur further interest in medical research for performing artists.

In addition to my research on Feldenkrais Method, Alexander Technique, yoga, and Pilates, I developed and distributed a survey for professional voice teachers to find out to what extent, if any, these teachers utilize these methods. The goal of this survey is to assess if, first, teachers are aware of these methods, and second, how they use any of these methods in their teaching. The survey also asked teachers if their students are involved in these methods outside of their lessons.

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There is a growing emphasis on singers’ abilities to bring their acting skills to any type of performance. Without proper body awareness and knowledge of good body alignment, singers may not be able to use their bodies well in a performance. Sacrificing proper body awareness and efficient body alignment may then lead to a decline in good singing technique. Data collected from this document’s survey may be helpful to see whether or not teachers of singing are able to implement crucial body alignment and awareness techniques into a weekly lesson or encourage outside work. This qualitative data was analyzed, and the results are presented and discussed within the document.

Perhaps the greatest challenge for singers is maintaining a healthy body and voice even when they are not “being” a singer. Olga Averino, a voice teacher and author of *Principles and Art of Singing*, said, “you cannot live one thing and sing another.”

Mind-body methods may be a step in learning how to move the body efficiently, and with practice, to make this correct movement a part of daily living.

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7 Olga Averino, introduction to *Principles and Art of Singing* (Novis Publication, 1989), xiii.
CHAPTER 2

Science of Body Alignment and Body Awareness

Posture is defined as the position in which one holds the body upright against gravity while standing, sitting, or lying down. Posture is set and maintained by the central nervous system, which coordinates various muscles. Proprioception, the unconscious perception of movement and spatial orientation that comes from stimuli within the body, also aids alignment. Good posture is crucial to all people to ensure that the least strain possible is placed on supporting muscles and ligaments during any kind of movement. If strain is placed on muscles due to inefficient posture, the body must use more energy, and it quickly becomes fatigued.

The spine has four natural curves and three regions. The curves in the spine help it to withstand great amounts of stress by evenly distributing it throughout the body. The first region of the spine is the cervical spine, which is the uppermost part of the spine in the neck. It consists of seven vertebrae. The first two vertebrae are specialized allowing the neck to move. The first vertebra, known as the atlas, is placed between the skull and the rest of the spine. The second vertebra, or the axis, has a bony projection called the odontoid process. This projection fits within a hole in the atlas and allows the neck to rotate.

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The first curve of the spine is located at the top of the cervical spine. This curve, called the cervical lordotic curve, bends inward resembling a “C.”\(^\text{12}\) The next twelve vertebrae make up the thoracic spine. This region of the spine is in the chest section of the body, with the ribs attaching to these vertebrae. The second curve, the thoracic kyphosis, is in this region, and it bends outward resembling a backward “C.”\(^\text{13}\) The third region of the spine is the lumbar spine located in the lower back area of the body. It is made up of only five vertebrae, but these are the largest vertebrae of the spine. The lumbar spine, which connects the thoracic spine and the pelvis, takes the bulk of the body’s weight. The third curve is in this region of the spine, and it is called the lumbar lordotic curve because of its inward bend.\(^\text{14}\) The large bone below the lumbar spine is the sacrum, which consists of several vertebrae that fuse together during development in the womb. The sacrum forms the base of the spine and the back of the pelvis.\(^\text{15}\) The sacral kyphosis is the backward curve at the end of the spine.\(^\text{16}\)

\(^\text{12}\) Ibid.
\(^\text{13}\) Ibid.
\(^\text{14}\) Ibid.
\(^\text{15}\) Ibid.
The terms “posture” and “alignment” are often used interchangeably, but they have slightly different meanings. Posture refers to the shape of the body in space while standing, lying down, sitting, or moving. Alignment refers to the relationship of one body part to another within the body. If one has poor posture while singing, body parts may be out of alignment.\textsuperscript{17}

The ideal alignment of the body to ensure good posture can be imagined with a plumb line of gravity drawn down through the side of the body. This line will go through a midpoint of the body passing through the mastoid process, a point anterior to the shoulder joint, a point posterior to the hip joint, a point anterior to the center of the knee joint, and a point anterior to the ankle joint. This line is anterior to the spinal column.\textsuperscript{18}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{plumb_line.png}
\end{figure}

Muscular activity keeps one from losing balance. Postural activity is controlled by receptors that detect fluctuations based on the body’s movement as well as visual, somatosensory, and vestibular information. These receptors then call on the muscles to counterbalance the body to bring it back to an equilibrium. Postural alignment for a normal or typical individual without a prior medical condition, such as scoliosis, is characterized by the following descriptions of support. From the head down to the trunk, the shoulders should be rotated back to a straight position causing the thorax to rise, and the chin should be parallel to the floor. The pelvis should be tilted forward but not exaggerated. The base of the body’s support should be placed on the balls of the feet with the heels flat, the feet shoulder width apart, and knees slightly flexed. It is necessary to note that one’s actual shoulder ends about three inches inward from where a tailor measures shoulder width. The feet will be spread too widely if they are set at a tailor’s shoulder points. Maintenance changes in postural alignment do not require conscious control, but enhancing motor skills and strengthening and conditioning muscles used to maintain correct posture does require conscious attention.

The three main postural malalignments are Scoliosis, Kyphosis, and Lordosis. Scoliosis is a sideways curve of the spine often found in children due to vertebral abnormalities at birth or problems with the nervous system that effect the muscles. Kyphosis, often referred to as a “hunchback” posture, is the over-curvature of the thoracic vertebrae. Lordosis or the swayback posture, involves greater exaggeration of the position of the pelvis. The swayback posture also

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19 Ibid., 333.
20 Ibid.
involves the knees in hyperextension as the pelvis tilts forward. In addition to the three main posture malalignments, there are a few other common posture problems worth noting. Kyphosis Lordosis is an increase in three of the natural curves of the spine. The less pronounced Thoracic Kyphosis is the most common spinal malalignment, and this posture is also known as the “forward head posture.” A “flat-back” posture involves the flattening of the normal thoracic kyphosis and lumbar lordosis. The feature common to all of the above malalignments, except for the “flat-back” posture, is the combination of a forward head thrust and shoulders that are rolled forward. This feature is known as “upper crossed syndrome.”

Figure 3 Abnormal spinal curvatures: Bales, Barbara M.D. A Guide to Physical Examination. Philadelphia: J.B. Lippincott Company, 1974.

25 Ibid.
26 Ibid., 94.
The balance of related muscle groups can have a significant effect on maintaining postural alignment. This relationship is between the agonist and antagonist muscle. The agonist is the muscle contracting against the force of another muscle. The antagonist is the muscle working in opposition to the agonist.\textsuperscript{27} If a group of muscles are tense for a long period of time they become shortened. A shortened agonist muscle then forces the antagonist muscle into a lengthened position. If this muscle is held in a resting position for too long, it will cause a “stretch weakness.” In other words, this antagonist muscle is forced into an elongated position and becomes weak. On the other side, the muscle held in a shortened or tensed position for too long will have a “tight weakness.” The inappropriate lengthening and shortening of these muscles interrupts the length-tension balance of the body. This balance cannot be restored until the release of tension and stretching of the shortened agonist muscle is combined with the strengthening of the now weakened antagonist muscle.\textsuperscript{28} Problems with postural alignment may lead to stretch and tight weakness since the muscles must overcompensate for the body’s imbalance. A person’s environment can heavily influence this issue. For example, the placement of a computer or the position that someone holds a cell phone may lead to poor length-tension relationships of the muscles.\textsuperscript{29}

A singer must pay special attention to postural alignment. Although the larynx is in the neck and the sound of the voice resonates in the head and moves out of the mouth, the singer uses the entire body to sing. The thorax, shoulder girdle, neck and head, and abdominals all work together during singing to produce and maintain the balance of the professional voice. When postural alignment is distorted, the singer’s ability to support the sound diminishes and incorrect muscles take over this action.

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{27} Ibid., 91.
\item \textsuperscript{28} Ibid., 92.
\item \textsuperscript{29} Ibid., 93.
\end{itemize}
\end{footnotesize}
The thoracic cage is an important structure for respiration in the vocal process. This area consists of the sternum, ribs, and vertebrae. The lungs are the main respiratory organs, and the shape of the lungs is maintained by the position of the thoracic cage. Therefore the posture of the thoracic cage directly affects the amount of air the lungs use during respiration.


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31 Ibid.
In addition the muscles of the thorax necessary to help support the posture for singing include the internal and external intercostal muscles. These muscles help elevate and depress the ribs. The diaphragm divides the thoracic cavity from the abdominal cavity.\textsuperscript{32}

![Thoracic Cage muscles](image)


Muscles in the neck, such as the sternocleidomastoid muscles, connect to the upper torso. They give crucial support between the head and torso, and they act as support for protecting the

larynx and its muscles. Alignment of the neck, head and thoracic cage is essential for optimal signing.

The shoulder girdle is an area that needs proper alignment for singing. These muscles and bones are located in the upper torso and involve the clavicles and scapulae. The shoulder and the back are connected by the trapezius muscle. The trapezius runs from the external occipital protuberance, which is the knob at the back of the skull, down to the twelfth thoracic vertebra of the spine. It is then inserted into the clavicle, the acromion, and the spine of the scapula. This massive muscle on either side of the body helps support the neck and shoulders as

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34 Ibid., 273.
The latissimus dorsi are the larger, flat, dorso-lateral muscles on the back and below the shoulder girdle. These muscles help keep the ribcage expanded during inspiration and expiration. The spine is able to stay aligned as the latissimus dorsi work together with the muscles of the torso and abdominals.

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The abdominal wall has nine regions and three front and three lateral planes. These muscles help support the lower thorax and pelvis, and they are dependent on proper alignment for efficient performance in respiration and other proprioceptive activities. Some of the primary muscles are the obliques, which are associated with the lower back and spine. They are connected to the pelvic girdle and ribs, and they support the abdominal organs during all movements such as breathing. The external obliques are the most superficial of the flat muscles of the abdomen. The internal obliques are a deeper layer of muscles and not as thick as the external obliques.


The transverses abdominis, which runs horizontally from the upper thoracic region to the pelvis, is even deeper inside the abdominal wall. It aids in structural support for posture and is an important constrictor for breathing during singing. The rectus abdominis, which runs vertically in the front of the abdominal wall, helps with supporting the posture of the thoracic region.\(^{39}\)

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The coordination and alignment of the muscles and bones of the head, neck, thoracic cage, and pelvis are essential for efficient singing. Singers should have some knowledge of their anatomy so they are more equipped to understand different sensations in the body. Singers will also be able to describe functions anatomically instead of relying on imagery. Imagery is an important part of singing, but when used in place of scientific knowledge, it may lead to inaccuracies that have the potential to cause significant vocal problems.

After discussing specific areas of the body, how the bones and muscles help with alignment, and common alignment disorders, it is necessary to discuss how poor alignment affects singers more specifically. Head, neck, and shoulder alignment are extremely important, and many singers experience excess tension in the neck and shoulders. The “upper crossed syndrome” previously mentioned combines a head and neck thrusting with rounded shoulders. As a singer lifts or thrusts the head forward, the neck becomes tense. The anterior muscles of the neck are unnecessarily stretched and the suboccipitals are in a shortened or tensed position. This imbalance creates weakness of the muscles of the anterior neck and neck retractors and the shortening of the suboccipital muscles.40 Several vocal problems may result from this muscle imbalance. The functions of the sternocleidomastoid muscles are compromised, and the freedom of the jaw is inhibited. The larynx is no longer free because it is being held in position by these stretched muscles.41 The shape of the pharynx may also be narrowed, which will have a negative impact on resonance.42 As the tongue and larynx are restricted, the balance of the larynx and

breath mechanism may be disrupted.\textsuperscript{43} Another problem caused by this postural alignment involves the rounded shoulders. Rounding the shoulders will cause the natural curves of the spine to be exaggerated creating an imbalance in the weight distribution of the body.\textsuperscript{44} Again, the entire body must work harder to compensate for this imbalance, and it then becomes unnecessarily tense. With the shoulders rounded, the sternum is collapsed and the ribs cannot fully expand for inhalation. The diaphragm is then inhibited from moving freely, and the function of the abdominal muscles that act as antagonist muscles for the diaphragm on exhalation is reduced.\textsuperscript{45} This domino effect can create tremendous problems for singers. A singer is often unaware of this postural alignment problem when practicing or performing. Slight changes in postural alignment that make a big difference in the quality of singing may go unnoticed in a singer with poor body awareness. Even if a singer has a very noticeable postural alignment problem, he or she may not know it or be able to correct it because this poor habit feels “normal” to him or her.

The exaggeration of the curve in the lumbar spine, usually called swayback, also causes a number of problems for singers. Swayback posture causes the latissimus dorsi to shorten. The anterior muscles used for breathing, such as the intercostals, transverses thoracis, rectus abdominis, and subcostals, are caused to disengage in this posture. If these muscles are not able to engage, the diaphragm’s movement is limited and optimal breathing is difficult. The singer may resort to using a clavicular or shallow breath. A shallower breath makes it impossible for the singer to take in enough air to sustain subglottal pressure for a long phrase.\textsuperscript{46} Shallow

\textsuperscript{44} Ibid.
\textsuperscript{45} Ibid., 19.
\textsuperscript{46} Ibid., 19- 20.
breathing also tenses the scalene and sternocleidomastoids, and these muscles affect the external laryngeal muscles, which help stabilize the larynx.\textsuperscript{47}

Another reason why the swayback posture or any lower spine malalignment limits vocal production and efficiency is the resulting contraction of the pelvic floor. Past studies have found a link between the activity of the pelvic floor muscles and the expiration muscles. Proper muscle activity of the pelvic floor allows the deep abdominal muscles, like the transverses abdominis, to function normally. These muscles provide lumbopelvic stability, which is necessary for good breath support during singing.\textsuperscript{48}

The importance of postural alignment continues down to the legs and feet, as there is a reciprocal relationship between the joints of the lower body to the upper body. Many problems occur with singers if they stiffen the ankles and knees.\textsuperscript{49} Locked knee joints can be connected to problems with exaggerating the curve of the lumbar spine. Unequal weight is then distributed as the pelvis is tilted more forward than necessary. The knee joint will then extend back and lock to create a counterbalance.\textsuperscript{50} With the pelvis exaggerated forward the abdominal muscles become tense. Since the abdominals are unable to relax, they cannot control the movement of the diaphragm.\textsuperscript{51} Weight must be transferred down evenly through the hip joints into the femurs, lower legs, and the feet for proper alignment. Female singers have additional challenges with postural alignment of the lower body due to their attire for performing. Women are expected to wear high heels, but heels that are higher than two inches cause them to overarch the feet. They

\textsuperscript{47} Ibid.
\textsuperscript{51} Ibid.
must then contract the toes and stiffen the other joints of the lower body to counterbalance this shift in weight. Female singers may be able to choose how high their heels are for recitals, concerts, and auditions, but in a theatre or opera performance, they will usually not have control of their costume attire.

Obesity is another consideration when dealing with body alignment issues for singers. The obese usually have a protruding abdomen, which leads to a forward displacement of the center of gravity. This also causes an increase in lumbar lordosis and a tipping forward movement of the pelvis. The thoracic kyphosis is exaggerated, which may lead to a reaction of the cervical lordosis with the head protruding forward. Along with the pelvis tipping forward, the hips may rotate internally, and the obese may experience flat feet due to the collapse of the plantar arch. Although obesity affects numerous people outside of the singing profession, singers have a particular interest in the subject for several reasons.

Singers are often required to stand for large amounts of time in performances and rehearsals. Even individual practice time requires standing to ensure proper breathing. A 2004 study by Park et al. compared 84 different static postures in obese and non-obese patients. The study found that obesity increased perceived postural stress in all 84 postures. Even though some postures increased stress in non-obese patients the stress was amplified in the obese group. During static posture, a person’s muscles must exert forces that will cause reactive movements at the joints to maintain a balanced equilibrium. The increased mass in an obese

person would increase joint reactions, internal muscle forces, and loadings on the bones and other tissues.\textsuperscript{55}

As singers move on stage, obesity will have an impact on dynamic posture stability as well. A 2010 study by Mignardot et al., studied postural stability in non-obese and obese patients and the additional cost or attention needed to maintain balance in several postural tasks. The study found that obese patients needed more attention to maintain postural stability. In addition, these patients were not able to multi-task as well, since their psycho-motor abilities were weakened.\textsuperscript{56} Singers are required to perform a multitude of activities while singing in a staged performance. These weakened postural stability skills have the potential to inhibit one’s performance and efficient singing. Singers are considered vocal athletes and must maintain their health to sustain the rigors of performance and rehearsal schedules. There is not one perfect body size for singing, but regardless of body type, singers should be the optimum size for their body structure in order to function at their best.

As previously discussed, body alignment is essential for optimal breathing in singing. The effect of obesity on postural alignment also leads to significant effects on breath efficiency. Morbid obesity has been found to reduce functional residual capacity (FRC), which is the volume of air present in the lungs at the end of passive expiration, expiratory reserve volume (ERV), which is the maximal volume of air that can be expelled from the lungs after normal expiration, and total lung capacity. These reductions are attributed to the mass loading and splinting of the diaphragm. The extra weight essentially inhibits the movement of the diaphragm,

\textsuperscript{55} Ibid.
and the individual has to work harder to breath.\textsuperscript{57} As obesity affects normal FRC and ERV, breathing for singing places even more strain on the body.

The physical issues of alignment discussed above are only part of the training singers need to aid efficiency. A large part of training must include body awareness to allow a singer to sense minute changes in the entire body and adjust alignment as necessary to achieve efficient singing. This process is also rooted in science. Body awareness is a heightened focus of internal body sensations. Mehling et al. define it as a subjective aspect of proprioception and introception that becomes conscious and then modified by mental processes, interpretation, conditioning, attention, attitudes, etc.\textsuperscript{58} This awareness is often associated with inner body awareness, but how one interacts with exteroceptive stimuli may be relevant for an increased understanding of the mind and body’s interaction.\textsuperscript{59} Interestingly, medical and psychological literature’s definitions of body awareness have largely been concerned that increased body awareness leads to worsening symptoms of anxiety, hypochondriasis, and difficulty dealing with conditions and pain. However, numerous studies now define body awareness as one’s ability to recognize the body’s subtle clues and cues. The findings from these current studies have discovered a person with increased body awareness is actually better at managing chronic diseases.\textsuperscript{60}

Singers must train their bodies, specifically the vocal tract, to perform complex actions both physically and neurologically. Singers develop an awareness of their movements, like breathing, the position of the larynx, and the movement of the vocal folds. These movements are

\textsuperscript{59} Ibid., 2.
\textsuperscript{60} Ibid.
normally reflexive, and they are usually controlled by the lower centers of the brain and triggered automatically. Breathing is controlled by the brainstem along with some cortical override. A singer learns to consciously be aware of inspiration and expiration in order to sense normally under-perceived proprioceptive stimuli. Stimuli include those that signal thoracic and abdominal expansion and dissent, laryngeal position, and vocal vibrations known as resonance. Similarly, a singer’s awareness of his or her postural alignment must be heightened in order to help the singing instrument and make adjustments while singing. After these functions become conscious, the singer must then train the awareness of these movements to become reflexive or “unconscious,” only now under the control of the cortex.

Movement sensation is an under-researched area with regard to the process of singing. The study of position movement sensation dates back to the 1500s with the Italian scholar, Julius Caesar Scaliger. He began studying the sense of locomotion during the Italian Renaissance. In 1880, Henry Charlton Bastain used the term kinesthesia to describe the idea of messages coming not just from the brain to the muscles and back, but also from other areas of the body, such as the skin and joints, to the rest of the body. Alfred Goldscheider went on to divide kinesthesia into three different types; tendon, muscle, and articular or joint sensitivity. Around 1906, Charles Scott Sherrington introduced the terms “proprioception,” “introception,” and “exteroception.” He redefined proprioception as the awareness of movement derived from muscular, tendon and articular sources. This redefinition points to the close connection of proprioception and kinesthesia. These two terms are often used interchangeably, but they do have different

62 Ibid., 4.
meanings. Kinesthesia refers more to the body’s motions and movements, and proprioception is the body’s awareness of its movements and behaviors. While kinesthesia allows one to sense the body in motion, proprioception is more than the sense of motion. It is the mostly unconscious feeling of muscle tone and sense of effort and balance within the body. Some believe that the sense of balance and equilibrium is unique to proprioception.64  For example, when an inner ear infection affects one’s sense of balance, proprioceptive sense is impacted, but not the kinesthetic sense. This person would be able to walk, by using their sense of sight to maintain balance, but he or she would not be able to walk with his or her eyes closed.65  Proprioception is controlled by special sensory organs within the soft tissue of the body's musculoskeletal system. With the interaction of the central nervous system, these sensory organs regulate body movements, postural alignment, and balance. In addition to basic movement sense, proprioception and kinesthesia are often associated with specialized activities in athletics and dance.66  However, proprioception plays a key role in singing when considering the above information of bringing normally unconscious activities, such as breathing and even posture, into a more consciously controlled state.  Research into the importance of proprioception in dancers reveals that both feeling the sensations of movement and seeing movement are helpful with learning to dance. Dancers must learn not only by feeling their movements, but also by watching others move.67 Singers must learn to feel refined movements of the entire body as well. Seeing a teacher demonstrate these movements also helps the student refine these motor skills. Dancers are frequently encouraged to use somatic education methods like Alexander Technique and the

66 Ibid.
Feldenkrais Method as well as Pilates and yoga to improve visual and proprioceptive feedback.\textsuperscript{68}

Singers are also starting to use these methods more for the benefits of better alignment, less tension, and improved singing efficiency. More research into the importance of proprioception in singers would bring useful information to both teachers and singers.

\textsuperscript{68} Ibid.
CHAPTER 3

Introduction to Methods for Body Awareness and Alignment

There are some references to posture in treatises from the early nineteenth century. Manuel Garcia I and his son, Manuel Garcia II, are credited with much of the earliest writings on vocal pedagogy. They suggested a noble posture, which is now referred to as the Garcia position. This posture was to be taken before inhalation and continued throughout the sung phrase and through the renewal of the next breath. In this posture the sternum is elevated and the shoulders are back and down without exaggeration. Since the sternum is high in this posture, the ribcage is able to remain fairly stable during the breath cycle, and there is no visible sign of chest displacement during any phase. This posture is part of the appoggio breath management technique with its origins in the Italian school of singing. This position allows the cooperation of muscular activity in the pectoral, epigastric and umbilical regions, as well as diaphragmatic control. The benefit of this posture is the ease and quickness of breath renewal without disturbing the rest of the singing instrument. To find this posture correctly, Garcia instructs the singer to position the hands in a crossed position at the lower back area below the ribcage when practicing, walking, and even sitting until the posture becomes consistent. However, when the student is practicing outside of the teacher’s supervision, it is possible for the position to become too exaggerated creating an unnatural curve in the spine. It is likely that Garcia’s students spent

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70 Ibid., 33.
72 Ibid., 34.
several hours a week studying with him. In today’s music schools, students do not have this luxury and will only have one lesson a week with an applied teacher. Students often practice incorrectly due to this lack of consistency. Both the teacher and eventually, the student, must find a number of awareness methods to find an optimal balance of postural alignment and preventative measures for excessive tension.

Muscle tension is a problem for many singers. Voice teachers have the difficult task of helping each student coordinate not just the voice, but also the body to ensure optimal vocal efficiency. The difficulty lies in the ability of the teacher to recognize and assess a student’s problems with excessive tension. These tensions are usually due to poor postural alignment and a lack of body awareness to correct these issues. A single muscle does not control a single motion, which means that muscles function as a unit and work synergistically. Therefore, a single muscle cannot be linked to excessive tension and usually an entire muscle group is affected by this tension.\(^{73}\) Even a slight deviation in posture may cause problems in vocal technique. The head and neck muscles, in particular, are susceptible due to the size of the head.\(^{74}\) Correcting a student’s postural alignment requires an understanding of the individual’s body and personality. Richard Miller points out that trying to correct a student’s posture may have adverse affects if it leads to overcorrecting. Telling a student to stand straight may cause them to over flatten the natural curves of the spine.\(^{75}\) Rather, it is better to find other methods to help the student discover his or her own natural posture. Miller suggests having a student balance on one foot and then the other to help the rest of the body find its balance and get rid of

\(^{74}\) Ibid.
any tendency to force an unnatural curve on the spine.\textsuperscript{76} In addition to assessing the body, teachers must recognize how emotional stress plays into the problems with posture alignment. Often there are patterns of misalignment in posture due to certain conditions of environment or emotional state.\textsuperscript{77} An example may be a singer tightening the body and locking the legs or pelvic floor during a difficult musical passage or lifting the neck and head before a high note. While these are also physical issues, the root of the problem may lie in the emotional stress of the singer. The physical manifestations of emotional stress and the lack of understanding of how the body must be aligned for good singing technique ultimately lies in the student’s total body awareness. Movement and body awareness methods, like Alexander Technique, Feldenkrais Method, yoga, and Pilates, due to their strong philosophies on the mind-body connection, may help students have a better awareness of their posture. Each method uses movements or a series of movements combined with extreme inward and outward attention as to how one makes these movements or places the body during movement.

Based on the science of postural alignment and the ideas of the mind and body connection of proprioception and kinesthesia, more teachers and students are realizing the importance of methods outside the traditional voice lesson to aid the singing voice. Some standard voice instructions and exercises do crossover with techniques found in Alexander and Feldenkrais, however, more can be done with these and other body alignment and awareness methods to enhance a student’s singing efficiency. The key to making these methods useful is bringing the concepts to teachers in a way that they can easily insert portions of these methods into lessons. Teachers may encourage students to seek outside work with these methods as well.

\textsuperscript{76} Ibid., 45-46.
Not every method will work for every student just as not every vocal exercise or explanation will work for every student. However, exploring these methods and some of the current research on them will encourage more experimentation and discussion on these topics.

With the importance of the singing instrument in mind, this document will present an overview of Western yoga, Alexander Technique, the Feldenkrias Method, and Pilates as methods for body awareness and postural alignment for singers. The similarities and differences between these methods will be discussed followed by a review of some of the clinical research available on the effectiveness of these methods in different populations.
CHAPTER 4

Cultural Evolution of Posture

Before discussing some of the most popular body awareness and alignment methods, it is important to understand the cultural changes in posture over time. Although the methods discussed in this paper are not American in origin, this document will focus on their use in the United States. Therefore, this chapter will focus on the evolution of posture specifically in America. Much of the changes in society’s view on posture stem from shifts in what parents and teachers expect from children. Another factor in the evolution of posture is the rise of new leisure habits and changes in material culture, such as clothing and furniture. Finally the importance of posture has changed due to the decline of middle-class identification through etiquette standards.78

Modern posture standards were originally part of the middle-class reidentification beginning in the 1750s. Europeans began to reevaluate their postures from the previous aristocratic norm of languid slouching to those based on new military posture codes and dance styles. American interest followed.79 Lord Chesterfield’s popular book on manners wrote about these new standards discouraging “strange postures and an ungenteel carriage.”80 Posture was a way to distinguish oneself from the lower-class workmen and frontiersmen. By the nineteenth century, many etiquette books had followed. These books described the association of good

79 Ibid., 1059.
80 Ibid.
posture and good character. Proper posture became a symbol of mastering physical weakness as well as good hygiene and sexual restraint.\textsuperscript{81}

Female beauty and restraint was often linked to posture. Women’s clothing aided postural standards by concealing the legs and restricting the lower back, especially when corsets were used. Men had stiff vests to remind them of good posture. In addition, highly regulated dances, like the waltz, promoted high standards in posture. Parents were instructed to prepare children for correct posture by making them sit erect at formal gatherings.\textsuperscript{82} Even parlor furniture inspired proper posture. Chairs were stiff and wooden or lightly upholstered. Backless chairs were often used in schools to challenge children’s postures. Rocking chairs in parlors would usually be reserved for the elderly and invalids until later in the nineteenth century.\textsuperscript{83} Doctors made the argument for posture to be included in health criteria in this century, and poor posture became linked to a number of illness and character defects. Some American scientists even linked posture to race. They stated that Europeans were the only race with erect spines and straight bones, unlike less civilized races.\textsuperscript{84}

A slight shift in culture started in the 1830s when furniture was being made with more upholstery and coiled springs for comfort. These developments were limited, but by the 1890s Sears began to advertise these stuffed pieces in its catalogues.\textsuperscript{85} The name of the parlor room had changed to the living room by 1910. A wider range of leisure activities was accepted, with ads showing families sprawling on the grass at parks. The radio promoted informal sitting and listening, especially with children who were often shown, in ads, on the floor as they listened to

\textsuperscript{81} Ibid.
\textsuperscript{82} Ibid., 1060.
\textsuperscript{83} Ibid., 1061.
\textsuperscript{84} Ibid.
\textsuperscript{85} Ibid., 1062.
shows. The middle class began visiting vaudeville shows and less rigid dances, like the Charleston, became popular. Clothing also changed as the corset disappeared from women’s clothing around 1910 along with other elaborate undergarments. Men’s clothing was slightly less restrictive as well. In addition, magazine illustrations, such as those in *Life*, began to show fashionable people in more casual poses.

Social conservatives were not happy with these trends. While the movement towards a more casual posture was developing, doctors also took a stance against this trend. New medical warnings emerged with the idea that correct posture was crucial to prevent the organs from constraining each other. The final decades of the nineteenth century found considerable research into problems of the spine and identification of deformities. Particular emphasis was on the genesis of posture in children.

Doctors, assisted with the rise of formal physical education, continued to emphasize posture in children and adolescent through the 1950s. Teaching good posture was essential, and students were subjected to complex postural tests. Jessie Bancroft formed the American Posture League in 1914. The league was made up of doctors, physical education specialists, and efficiency engineers. This group assisted companies with seating designs, but their main task was developing the diagnostic devices to check children’s posture and the education literature to inform Americans about postural self-discipline. During this time and onward, much of children’s bad posture was blamed on parents who neglected them. Modern living’s new comforts were also blamed for the decline in stature. In 1929, doctors were still encouraged to

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86 Ibid. 1063.
87 Ibid., 1064.
88 Ibid., 1065.
89 Ibid. 1069.
90 Ibid., 1070.
91 Ibid., 1073.
check children’s posture as soon as they could stand despite the fact that toddlers would inevitably fall short of ideal posture.⁹²

Even though some doctors and educators had extreme ideas about posture and its correlation with health and morality, the continual evolution of the relaxed body stature prevailed due to new standards in modern culture as well as more concern for other issues in education and medicine. The American Posture League closed in 1943, and most posture clinics and school programs had ended by the 1950s, except to check for scoliosis.⁹³ People began to consider the impact of different body types making rigid concepts of posture standards inappropriate.⁹⁴ By the 1960s parents were encouraged not to scold children about their posture, a complete turnaround from the decades of the past.

While Americans continue to enjoy a more relaxed standard of how they carry themselves, many doctors might regard today’s lifestyle as not concerned enough with posture. However, the problems of poor posture have little to do with being overly relaxed and more about modern fashion and modern conveniences that affect alignment. People’s increasingly sedentary lifestyle plays a large roll in this concern as well.

Sitting for long periods of time without good posture may lead to back pain and tight hip flexors and hamstrings. The natural curves of the spine may overarch, and the overloading of the spine that takes place during long periods of sitting compresses the abdominals, which can restrict breathing.⁹⁵ Alternating sitting and standing along with using a chair with an incline of fifteen to twenty degrees helps to counteract some of these issues. Extended use of computers and cell phones also restricts good posture and may lead to unnecessary tension and pain. Long

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⁹² Ibid., 1079.
⁹³ Ibid.,1086.
⁹⁴ Ibid., 1087.
hours hunched over a desk using a computer causes the shoulders to roll forward and the head
and neck to jut forward. Along with a better chair, one should make sure that the computer
screen is perpendicular to the desk or slightly tilted upward so looking down is not necessary.
One should also be at arm’s length from the monitor.  

Holding a cell phone to the head may cause the user to hold his head, neck and shoulders
in an irregular position for too long. The increased use of the cell phone brings up the same
issues as laptop computers, as users hunch over to look at a small screen. For phone use,
headsets are helpful to avoid poor positioning of the upper body.

Clothing has become less restrictive, but shoes remain an issue for postural alignment in
women. Women who wear high heels on a daily basis tend to have tightness in the lower leg
muscles causing poor alignment. Heels may be part of a woman’s profession, but she should
refrain from heels over two inches.

Most of the changes in a modern lifestyle will continue to make the ideal posture a
difficult goal. Many jobs will continue to be sedentary and the popularity of compact computers
and high tech cell phones will, more than likely, not diminish. According to the American Pain
Association, more than twenty-six million Americans between the ages of 20 and 64 suffer from
chronic back pain. With the increases in chronic pain of the back, neck, and shoulders, it is
necessary to address the importance of good postural alignment so that individuals may increase
their body awareness. This awareness will allow individuals to listen to their bodies’ signals of
tension, and hopefully, find useful methods to help keep the body in good health and alignment.

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96 Ibid., 43.
97 Christine Isley-Farmer, “Legs to Sing on: A practical guide for Singers and Voice Teachers,” Journal of Singing
61, no. 3 (2005): 298.
CHAPTER 5

Alexander Technique

Background on F.M. Alexander (1869-1955):

Fredrick Matthais Alexander grew up in a small town in Tasmania and later moved to Melbourne, Australia. Alexander was a clerk, but he also acted and wrote for the Amateur Dramatic Club of Melbourne in his free time. As Alexander became more serious about his reciting, he decided to take elocution classes. However, he soon began to notice that he was becoming hoarse while speaking. His hoarseness became a chronic problem, and he often lost his voice completely by the end of a performance. He saw many doctors, but neither their medication nor advice to rest seemed to work for very long. After discussing his problems at length with his main doctor, Alexander decided to observe what he was doing physically while he was reciting to see if he could discover what was causing his vocal problems. He used mirrors to watch himself while speaking and noticed several problems over the course of his self-analysis. First, he was pulling his head back. Then, he was depressing his larynx. Finally, he took in a very audible, gasping breath before speaking. He continued to experiment with certain movements of the head and the neck and noticed how much these movements affected the position of the larynx. He also noted how the stature of his body was affected by the position

100 Ibid.
101 Ibid., 9
of his head and neck. Along with these physical habits, Alexander saw that he would lift his chest and shorten his stature before speaking. After months of observation and experimentation, Alexander was able to stop these bad habits. He realized that he had to consciously change his usual behavioral pattern by stopping the undesirable action before it happened. He had to redirect these physical movements that had become ingrained into his performance style. The directions he used to stop these bad behaviors changed the functioning of his breath mechanism, which then changed his voice. Alexander’s realization about the importance of the connection of the body’s conscious use and functioning led him to develop a control and guidance method that would help the body’s organization and optimum function. His method coordinates the psychophysical processes. This term describes the branch of psychology that deals with the relationships between physical stimuli and sensory response. Alexander started his work and lessons by addressing the position of the head and neck. He believed that if the head and neck were in the correct position, the rest of the body would follow. Over the course of his career, Alexander wrote several books, which show the development of his concepts. His third book, The Use of Self, was written in 1932. It is considered to be his best-written book, and it includes a detailed description of his technique and its development.

Today, the American Society for the Alexander Technique is the largest professional association for certified teachers in the United States. Since its formation in 1987, more than

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102 Ibid., 10.
103 Ibid.
104 Ibid., 9.
106 Ibid., 38.
1,000 teachers have been certified. These teachers are required to complete 1,600 hours of training before certification.\textsuperscript{107}

**Concepts and Principles of Alexander Technique**

Patrick McDonald, whose father was a physician in support of Alexander, was Alexander’s student and assistant for many years. McDonald’s book, *The Alexander Technique as I see it*, suggests five main principles that are essential to Alexander Technique.\textsuperscript{108} The first principle is the recognition of the force of habit. One must use meticulous observation to change a mechanical repetition. Postural problems cannot be solved unless one chooses to recognize them. This involves work with mirrors as Alexander used when he was first trying to discover the origin of his vocal problems.\textsuperscript{109}

The second principle includes “inhibition” and “non-doing.” The term inhibition does not mean to suppress the body or mind in a negative way, but instead it means that one must refrain from automatically using habitual movement so that a conscious decision to move can be made.\textsuperscript{110} Non-doing is using a more passive than active control. Instead of “doing” or forcing an action, a student is encouraged to “allow” the action, such as breathing, to happen.\textsuperscript{111} Often included in the idea of non-doing is taking more time to work on changing habits. Alexander called this the ‘means-whereby’ action, which is superior to ‘end-gaining’ action.\textsuperscript{112} Alexander believed that a person had to inhibit the habitual use of a mechanism and then consciously project new directions for the performance of an act. This change would lead to a better use of

\begin{flushright}
\textsuperscript{109} Ibid., 38-39.
\textsuperscript{110} Ibid., 41.
\textsuperscript{111} Ibid., 46, 49.
\textsuperscript{112} Ibid., 81.
\end{flushright}
the mechanism. Students should achieve an objective by the use of knowledge and experience rather than by concentrating on a desired result. The difficulty of ‘means-whereby’ is that if the series of directions involved in an act are not followed in sequence, or rushed to achieve a desired end, then all of the following acts of the series will go wrong. Alexander consistently found that even though he knew what he needed to do to change his head and neck positioning, he was often unable to change his habitual action. In his writings, Alexander describes that changing his habits was a slow process that took much thought and dedication.

The third principle is the recognition of faulty sensory-awareness. People often receive inaccurate sensory feedback from the body. If bad behavioral habits are established over a long period of time, a person will not notice this action because it “feels” correct. A developed and refined awareness is necessary for singers to listen to the body, especially in high pressure or tense situations as well as lengthy performances or rehearsals, which require good physical endurance.

The fourth principle is called “sending directions.” Alexander believed that to correct a movement he had to stop and consciously send new directions to the body. Sending directions had to occur before the movement in order to replace older habits, and sending directions had to be repetitive to insure change.

The final and most crucial principle is primary control. Primary control is the relationship of the neck, head, and back. It influences the functioning of all the mechanisms of a person. Individuals must have a proper coordination of primary control for proper use of the

114 Ibid., 31.
116 Ibid., 53.
117 Ibid., 58.
whole body. Habitual contracting of the neck muscles leads to an unnecessary contraction of many other muscles of the body. Alexander called this contracting a “downward pull” that would shorten the spine and counter the involuntary muscles that support the body. Alexander often looked to the ‘natural’ body alignment of children and their flexibility and erectness. He believed that growing up and adapting to modern environments interfered with humans’ naturally organized bodies.

**Concepts for Postural Alignment and Body Awareness in Singers**

Alexander technique does not teach singing technique, but it may be useful for showing students how not to interfere with the physical mechanisms involved with singing. Singers must learn how to cope and respond correctly to outside stimuli. Alexander’s ideas about the use of self discuss the misuse of the psychophysical mechanism, which includes the mind and body. In Alexander lessons, teachers use hands-on direction, and students learn to recognize and consciously change behavior. Work includes relearning simple tasks, like sitting and standing up to improve use and functioning.

The principle of recognition is an important concept for singers. Most singers suffer from some form of bad postural alignment as a habit or physical compensation. As a first step, singers must acknowledge these habits in order to correct them. Mirror work is not a new concept for singers, but beginning singers often have difficulty using a mirror and fully accepting

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118 Ibid., 76.
122 Ibid., 22.
123 Ibid., 27.
bad habits. Without this acknowledgement, the process of undoing poor habits cannot begin.

The principles of inhibition and non-doing can be preventative measures for singers as it allows them to notice and correct posture problems before the movement occurs. The use of passive control in non-doing as well as the principle of recognizing faulty sensory awareness increases the level of body awareness so habits may be changed even after long periods of bad behavior. These principles also help students with vocal efficiency for breathing and problems with vocal overuse. Sending directions is extremely useful for improving postural alignment. Alexander technique uses specific messages that aid the singer such as “let the neck be free,” “allow the head to go forward and up,” and “allow the back to lengthen and widen.”124 These messages, which rely on a strong mind-body connection, encourage the singer to release tension and refocus on how the movement should unfold. The slow movements are subtle, but they help the singer visualize a better and less constrictive posture through a more passive control. The position of the neck, head, and back are quite important for singers because when primary control is functioning correctly, reflexes that control the breathing mechanism and laryngeal muscles are properly set and interferences are prevented.125 Alexander teachers use only a few specific exercises, such as the Monkey and the Squat, to find the best neck-head-back relationships. The exercises help to lengthen the spine, free the legs, and help rebalance the body.126

Alexander was careful that his students did not let the exercises become unconscious with repetition. He encouraged students to go through the process of directions and conscious control to complete the movements with each repetition.

124 Ibid., 60-66.
Again the importance of postural alignment for singers using Alexander Technique is the awareness of the relationship of primary control to the entire body. With primary control a singer will be able to find better use of the entire body from the head to the feet. This optimal postural balance will be individual to each student. Primary control allows the spine to lengthen properly during exhalation and the direction of widening the back allows the ribs to move up and out during inhalation. Since the balance of weight is centered at the front of the spine with primary control, this balance continues through the center of the thorax and through the pelvis, which is not tipped forward excessively. The weight is then centered through the legs, knees, ankles, and arches of the feet creating optimal support for respiration and phonation. Instead of focusing on isolated movements of one area of the body at a time, the Alexander Technique focuses on efficient postural alignment created by the balance of the neck and head and the lengthening of the spine. This combination allows the entire body to function properly.

128 Ibid., 16.
129 Ibid.
CHAPTER 6

The Feldenkrais Method

Background on Moshe Feldenkrais (1904-1984):

Moshe Feldenkrais was born in 1904 in the present-day Ukraine Republic. His educational background contained a wide variety of studies including the Hebrew language, Zionist philosophy, and both mechanical and electrical engineering. His doctoral studies were in engineering at the Sorbonne in Paris. He was also extremely skilled in the art of self-defense, particularly Jujitsu and Judo. Even with his athletic ability, Feldenkrais had recurring knee problems from a soccer injury in 1929.\(^{130}\) His knee problems resurfaced severely in the 1940s, but he delayed surgery when faced with the knowledge that the surgery’s success rate was only fifty percent. Feldenkrais decided he would see what he could do for himself.\(^{131}\) Based on his knowledge of mechanics, physiology, and judo, he began to investigate how he physically moved his body. He focused in on the minute details of how he sat, walked, and stood. His attention to how the body moves led to the development of the Feldenkrais Method.\(^{132}\)

Feldenkrais wrote several books on Judo principles in the late 1940s and early 1950s. At the same time, he had begun to teach some experimental classes based on his findings from assessing his own movements. His first book on movement was called *Body and Mature Behavior*. In this book he discussed his development of understanding how humans learn and

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\(^{132}\) Ibid., 4-5.
function through movement. Feldenkrais moved to Tel Aviv in 1951, and by the mid-1950s he began to solely teach movement classes. He titled his classes *Awareness through Movement* and *Functional Integration*. By the mid-1960s, Feldenkrais began to publish more writings on his system of movement, including *Mind and Body*, *Bodily Expression*, and *Improving the Ability to Perform*, which is titled *Awareness through Movement* in English language editions. In 1969, Feldenkrais began a small training group in Tel Aviv. He also taught two training sessions for potential practitioners in the United States, first in San Francisco and then in Amherst, Massachusetts. By his death in 1984, he had trained around 300 practitioners, most of them in the United States.

In 1977 the *Feldenkrais Guild* was established to represent practitioners and adopt a code of ethics and standards of practice. An international Feldenkrais guild was eventually established in 1992. There were nearly 3,000 trained Feldenkrais practitioners in more than thirty countries around the world by 1996.

**Concepts of The Feldenkrais Method**

The Feldenkrais Method uses movement for the process of self-discovery and includes two components. One is a guided group movement called Awareness Through Movement (ATM) and the second, known as Functional Integration (FI), is a hands-on session with a practitioner. In ATM, students are led through movement sequences that will help them discover better ways to perform everyday functions like sitting, reaching forward, and breathing.

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134 Ibid.
136 Ibid.
137 Ibid.
While clarifying these movements, the nervous system that controls the movement becomes involved rather than merely using conceptual consciousness. This involvement allows any changes in the body’s function to be better retained.\textsuperscript{139} FI classes resemble ATM class, but they are more tailored to the specific needs of the individual student. Ideally, the more efficiently organized movement of the practitioner will help the less organized student’s flow of movement.\textsuperscript{140} In ATM, the guided movements are meant to be slow and gentle. The emphasis is placed on the learning process and the “how” of each movement through self-exploration.\textsuperscript{141} The slow movement allows one to detect even a small change in stimulus in order to maximize one’s sensitivity and awareness of the body.\textsuperscript{142} There is no competition involved in Feldenkrais, and students are free to progress in their assessments at their own pace.\textsuperscript{143} If the body’s movement is poorly organized, it will often play a significant role in most muscular and skeletal complaints. The Feldenkrais Method aims to reduce excessive tension and allow a person to have more fluid movement.\textsuperscript{144} The Feldenkrais Method is not a cure for any type of medical problem, but it is a method designed to reform or re-educate the individual’s use of the body.\textsuperscript{145}

The Feldenkrais Method uses five key ideas. First, life is a process. This idea centers on the overall consideration of the changing person. As a person’s body changes or ages, movement must be reevaluated. The second key idea is that the involvement of the whole self is necessary for effective movement. Every person goes through changes as they age, and the

\textsuperscript{139} Ibid., 3.
\textsuperscript{142} Ibid.
\textsuperscript{143} Ibid.
whole self must continually be examined to maintain efficiency. Feldenkrais believed that continually seeking better and more efficient ways to use movement could be beneficial at any age, even if the individual has no noticeable movement problems.\textsuperscript{146} The third idea is that learning is the key activity of humans. Humans must learn more than any other animal from the beginning of life. Therefore, humans must continue to learn and adjust to external and internal changes throughout life.\textsuperscript{147} The necessity of choice is the fourth key idea. Through exploratory learning, Feldenkrais practitioners help students create choices for themselves. Teachers present alternative movements during classes so that students may choose the best way to move or function.\textsuperscript{148} The fifth key idea for the Feldenkrais Method is the logic of human development. This logic must be followed when helping someone increase functionality through Feldenkrais. This is why small movements are evaluated with slow movement to allow one to increase his or her sensitivity to the body in motion.\textsuperscript{149} The focus on small, refined movements to improve functioning has drawn performing artists and professional athletes to the Feldenkrais Method to help improve their performances and technique.

**Concepts for Postural Alignment and Body Awareness in Singers**

Performing artists study the Feldenkrais Method for any number of reasons ranging from specific problems with pain to preventative measures. Individuals move at their own pace, and the practitioner’s role is to guide the student towards exploration of his or her self, not to make corrections. Nelson and Blades-Zeller’s book, *Singing with Your Whole Self*, sets up a series of lessons that focus on relating the Feldenkrais Method to singers. One of the chapters discusses the idea of active versus passive control with a similar approach to Alexander Technique. This

\textsuperscript{146} Ibid., 6.
\textsuperscript{147} Ibid.
\textsuperscript{148} Ibid., 7.
\textsuperscript{149} Ibid.
topic is quite important for singers or anyone that uses the body in performance. Singers and performers in general, want to be in total control of a performance. If the singer can feel like they are physically making the voice happen as he or she performs, he or she believes that this is correct. However this active control usually results in an increased effort and decreased efficiency.\textsuperscript{150} The active control in performance is often a forced effort by the singer involving the areas of the jaw, tongue, breath, and soft palate to “make” the sound happen or sound a certain way.\textsuperscript{151} The best performances, according to Nelson and Blades-Zeller, feel like the exact opposite. Often singers describe their best performances as requiring little effort. The phrase, “in the zone” is applied, and this sense is due to a more passive control. Passive control happens as the singer is prepared, trusts the technical work done in the practice room, and is able to let go of overly controlling the performance. This requires a heightened sense of self.\textsuperscript{152} Passive control may also help proper alignment for breathing with exercises that explore breathing while ridding oneself of habitual holding patterns that restrict the body.\textsuperscript{153} Nelson and Blades-Zeller state that a singer must also develop a kinesthetic imagination.\textsuperscript{154} Even if a teacher is able to spot tension and posture problems in a student, he or she may not be able to alter these habits. A student must learn how to master the body with its own “neurological language.”\textsuperscript{155} Kinesthetic imagination goes along with the development of proprioception, which allows the singer to accurately sense him or herself both statically and in movement.\textsuperscript{156} This imagination lets one understand more completely the effort or intensity that

\textsuperscript{150} Ibid., 19.
\textsuperscript{151} Ibid.
\textsuperscript{152} Ibid., 22.
\textsuperscript{153} Ibid., 75.
\textsuperscript{154} Ibid., 8.
goes into each movement. This awareness is helpful in catching posture alignment problems before they start or worsen.

Each chapter in Nelson and Blades-Zeller’s book offers a series of lessons for different areas of the body and instructs the singer to analyze movement in detail. Lessons include work on freeing the neck and head, balancing while standing, rocking the pelvis back and forth, releasing the tongue, breathing, upper trunk flexibility and many more. These exercises take patience and extreme attention to small movements. However, unlike a full ATM Feldenkrais class, they are broken up into small lessons, which could be used in small increments during voice lessons and practice sessions. Nelson and Blades-Zeller also say that a heightened awareness of the body and its effort may help the singer assess how much effort and intensity is going into the actual singing voice. A common problem with young singers is over-practicing. An increased awareness of the singer’s own body can help him or her to set better limits on practice time and efficiency.157 As an artist revisits his or her movements, Feldenkrais Method may help the artist to move away from habitual patterns ingrained after years of practice. The overall process of releasing and reconnecting the mind and body may impact the emotional and psychological state of the artist.158

157 Ibid., 9.
CHAPTER 7

Yoga

Background and Principles of Western Yoga:

Yoga comes from the Hindu Vedic tradition and is more than five thousand years old. The forms of yoga have gone through many changes and developments since its introduction into Western society. It was intended as a way of uniting an individual’s body, mind, and soul in order to unite the entire being with the Divine.\(^{159}\) Swami Vivekananda introduced yoga to the World Parliament of Religions in Chicago in 1893, and he founded the New York Vedanta Society in 1899.\(^{160}\)

There are six main branches of yoga, but research for this document will focus on Hatha yoga because of its prevalence in the United States and relevance for singers. Yoga comes from Sanskrit and means “union.” The word “Hatha” is divided into two Sanskrit words, *ha* meaning “sun” and *tha* meaning “moon.” Together, Hatha yoga implies the union of two opposite forces to create balance and unity.\(^{161}\) Hatha yoga or physical yoga focuses on strength, flexibility, resilience, and an increased consciousness of breath and movement.\(^{162}\) There are also branches

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within Hatha yoga, and those of particular interest to singers are the Iyengar and Kundalini branches.\textsuperscript{163}

Iyengar yoga comes from the teachings of the yoga guru Bellur Krishnamachar Sundararaja (BKS) Iyengar. He was born in 1918 and is largely responsible for the popularity of yoga in the West. His innovations with alignment as well as his use of yoga as a therapeutic tool are standards of yoga practice today.\textsuperscript{164} The Yoga Sutras of Patanjali is an ancient yoga school of thought dating back from either the 2\textsuperscript{nd} century B.C. or the 5\textsuperscript{th} century A.D\textsuperscript{165} Iyengar focused on eight areas of these sutras in his teachings.\textsuperscript{166} The practices of this yoga are asanas (postures), pranayama (breath control), dharana (focus and concentration), dhyana (meditation), yama (moral discipline), and niyama (restraint).\textsuperscript{167} In particular, Iyengar’s yoga emphasizes alignment of the body in the asanas or postures.\textsuperscript{168} Pranayama has a double meaning of “breath control” and “life control.” This teaching emphasizes the breath energy that should always be flowing through the body since this is the source of life. Iyengar yoga’s asanas are used to establish good alignment and to build good breathing habits. The breath moves rhythmically as one holds a posture or moves through several in order to maintain a cycle of continuous flow between puraka (inhalation) and rechaka (exhalation).\textsuperscript{169} There is a breathing pattern called kumbhaka, which focuses on holding the breath between inhalation and exhalation. However, singers will want to avoid this practice because it causes the support muscles to lock.\textsuperscript{170}

\textsuperscript{163} Linda Lister, \textit{Yoga for Singers: Freeing your Voice and Spirit through Yoga} (lulu.com, 2011), 11.
\textsuperscript{165} Ibid.
\textsuperscript{166} Ibid.
\textsuperscript{168} Ibid.
\textsuperscript{169} Ibid., 20-21.
\textsuperscript{170} Ibid., 23.
flowing and synchronized breathing used for vinyasas, or a series of poses, will allow singers to better align the body and discourage muscles from becoming rigid.

Kundalini is a yoga practice that centers on harnessing the energy of the spine. This form of yoga is represented by a snake, which is coiled at the end of the spine. Kundalini “uncoils” this snake or energy of the spine and focuses on practices that expand sensory awareness and intuition to raise one’s consciousness. The Kundalini energy is both psychic and physical so it affects the body and the spirit. Yogi Bhajan brought Kundalini yoga to the West in 1969.\(^{171}\) In addition to Kundalini’s focus on alignment and the freedom of the spine, it also uses a mixture of breathing patterns, mantras, mudras or hand gestures, and chanting practices.\(^{172}\)

### Concepts for Postural Alignment and Body Awareness in Singers

Many students are drawn to yoga to improve physical movement, well being, and to reduce stress and tension. The quest for balance and harmony in Hatha yoga is similar to a singer’s need to balance the musical art with the technique of the physical body.\(^{173}\) The focus on alignment and breathing within the postures of yoga may be of particular interest to singers.\(^{174}\) Iyengar’s 1966 book, *Light on Yoga*, is considered to be the definitive reference on asana practice. He writes that the purpose of asanas are to align and harmonize the physical body with all the other layers a person possess, such as the emotional, spiritual, and mental body.\(^{175}\) Iyengar seemed to have an affinity for musicians, and he points to them many times in his writings. In his book, he compares yoga’s union of mind and body to a musician becoming one with his instrument and its music.\(^{176}\)

\(^{171}\) Ibid., 14-15.  
\(^{172}\) Ibid., 15.  
\(^{173}\) Ibid., 12.  
\(^{174}\) Ibid., 10.  
The areas of *dharan* and *dhyana* can also be important practices for singers because yoga teaches awareness of the body and the mind. As awareness is heightened throughout the body, students become sensitive to whether the body is in alignment in a particular *asana*. Therefore, the individual is sensing the position of the body without literally seeing the body.\(^{177}\) This sensitivity of body position has the potential to be extremely useful for singers. Singers use mirrors to watch themselves as they sing and look for correct head, mouth, and body position, but singers must learn how to sense if they are in a good position or not without a mirror. This is a difficult task considering that singers must also concentrate on the music they are singing.

Whether maintaining a pose or moving through several positions, yoga teachers remind students to breath continually. The lungs, diaphragm, and intercostal muscles are trained to maintain the rhythmic flow of breath.\(^{178}\) This same training is used for singers so that the breath remains dynamic. Energized breath keeps the abdominals, intercostal muscles, and the diaphragm flexible and avoids excessive tension. The alignment of the body is a key practice in yoga to facilitate optimal breath just as in singing. Some poses are stationary and help to bring one’s focus on the body and its position. Other poses work to lengthen the spine or open the rib cage. One may choose from numerous poses to help with alignment and breathing. For example, the Warrior pose strengthens the upper and mid back muscles, which help keep the chest up and open.\(^{179}\) Half and full-forward bent over poses strengthen the lower back and legs while kneeling forward bends loosen the shoulders. Other poses like Bridge and Camel stretch the neck, chest, and abdominals.\(^{180}\)

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\(^{177}\) Ibid.

\(^{178}\) Ibid., 20-21.


\(^{180}\) Ibid.
Mental clarity and focus are essential for singers in practice and in performance. Meditation before performances or auditions may bring the singer’s focus back to the balance of the body and breath. Yoga is not competitive, and those practicing this method are encouraged to focus inward and challenge themselves in poses but never push beyond what they are capable of doing. Iyengar suggested pausing to reflect on movements after they are done as well as during the movement. The slowness of the different asanas gives the student time for this reflection. Iyengar states that self-awareness is different from self-consciousness. Self-consciousness is a constant worry of what one is doing and will cause exhaustion and strain on the body. With self-awareness, a person is fully within him or herself, not outside looking in. This awareness brings energy back to the body and mind. This difference is significant for singers because they must allow their awareness to help them in practice and performance rather than worry themselves. Yoga’s focus on alignment, breathing, and self-awareness makes it a useful tool for singers to improve their physical and psychological being.

CHAPTER 8

Pilates

Background on Joseph Pilates (1883-1967):

The Pilates method is named after its founder, Joseph Pilates. Pilates, born in Germany, was a sickly child and greatly desired better health. His father was a gymnast and his mother was a naturopath so it is no surprise that he developed an interest in gymnastics and fitness. Before antibiotics and other modern drugs and life saving techniques were discovered, health spas and exercise for health were a common part of German life. Modern gymnastics had become extremely popular in Germany to increase the strength and fitness of men. Women used another form of gymnastics, later called calisthenics in the United States, to increase flexibility, endurance, and strength. In addition to gymnastics, Pilates studied yoga, martial arts, and the physical regimens of both eastern and western philosophies. He was very interested in anatomy and the classical Greek ideas of being balanced in both body and mind. Pilates moved to England in 1912 to work as a boxer and self-defense instructor, but he was interned as an enemy alien at the outbreak of World War I. During his time in the camp, he encouraged other prisoners in the camp to participate in a program of conditioning that he developed using mats. Pilates was eventually transferred to the Isle of Man and was an orderly in a hospital during this

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later period of the war.\textsuperscript{185} He began to work with non-ambulatory patients to help with their rehabilitation. During his time at the hospital he developed a fitness program based on resistance training. He attached springs to the patients’ beds to support their limbs while he worked with them.\textsuperscript{186} Pilates believed these resistance exercises would help patients recover muscle tone more quickly. Since these patients had less muscle atrophy during their recovery period, their rehabilitation process was able to start sooner with this assistance.\textsuperscript{187} This finding led to the development of his ‘Cadillac’ exercise machine, which was a four-posted bed with springs and hanging bars. He also developed a piece of equipment he named the ‘Universal Reformer.’ This Reformer was a sliding platform with springs on it. The patient would lie down on it, sit, or stand. These machines removed the fight against gravity and, in the supine position, tension could be regulated and the spine and pelvis could be better aligned.\textsuperscript{188} Pilates returned to Germany after the war and met Rudolph van Laban. Van Laban later developed Labanotation, a widely used dance notation. This meeting was Pilates’ introduction to dance, which was the beginning of a lifelong interest and area of crossover for Pilates exercises.\textsuperscript{189}

\textbf{Concepts and Principles of Pilates:}

Pilates believed in the importance of both mental and physical conditioning. He initially called his exercise regimen, which focused on muscle control, “The Art of Controlology.” Many

\textsuperscript{185} Ibid.
\textsuperscript{187} Ibid.
\textsuperscript{189} Ibid.
Pilates practitioners use these ideas today. Pilates immigrated to the United States around 1926, and he and his wife, Clara, began training the first Pilates apprentices in the late 1930s.

Pilates mixes the physical movements of gymnastics, yoga, martial arts, and dance with specific philosophical ideas. He had six principles, and modern instructors have added two more. Pilates’ first principle is “concentration.” This is the most important principle because it motivates the mind to become active before a physical action happens. The second principle is “centering,” which advocates abdominal control instead of abdominal strength. The Pilates method focuses a great deal on how the abdominal muscles and large back muscles help to support one’s posture. This area of the body is also referred to as the “core” and the “pelvic floor.” The third principle is “breathing.” Breath energy is necessary for any physical activity and helps to develop strength, flexibility, length, and concentration. “Control,” the fourth principle, refers to the choice of movement instead of habitual actions of the body. “Precision,” the fifth principle, determines the placement of a movement and its accuracy. The sixth principle is called “flowing movement.” Fluid movement is what one strives for in exercise as well as everyday movement. The two added principles used by Pilates, but not listed as his original principles, are “isolation” and “routine.” Isolation is focusing on specific muscles groups to

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193 Ibid., 51-52.

194 Ibid., 52.
improve function. The principle of routine encourages daily use of Pilates exercises, which help to improve body and mind functioning.\textsuperscript{195}

In 1980, Friedman and Eisen, both students of Pilates, published the book, \textit{The Pilates Method of Physical and Mental Conditioning}. It clearly defines Pilates’ principles but also incorporates some refinements.\textsuperscript{196} Many apprentices merged their own ideas with those of Pilates. Friedman and Eisen agreed with Pilates’ idea of straightening the spine, which is now considered to not be good form. They disagreed, however, with Pilates’ directions to lock the joints to straighten the spine. Instead, they focused on stretching the joints for maximizing the body’s extension.\textsuperscript{197}

One of Pilates’ students, Eve Gentry, moved in a different direction. She developed what is known as Pre-Pilates. Gentry taught Pre-Pilates as a preliminary course to instruct her students about the ideas and concepts of Pilates before they practiced the exercises.\textsuperscript{198} Pre-Pilates focuses on the concepts of postural alignment, breathing, imprinting, and joint release so that the traditional Pilates exercises would be more effective. In particular, Gentry wanted to make sure that students did not “hold” their posture in place by locking the joints and muscles. She used walking as an example with her students since it is an everyday movement.\textsuperscript{199} She related breathing to the mobility of the thoracic cage. She believed that Pilates exercises would help to increase this mobility and therefore, lung capacity. Gentry’s technique of imprinting focuses on spine awareness and releasing the muscles around the spine to allow it to lengthen.

\textsuperscript{195} Ibid., 53.
\textsuperscript{197} Ibid., 280-281.
\textsuperscript{199} Ibid.
This technique is abstract but is meant to increase a student’s body awareness revealing any excessive tension that is hindering his or her postural alignment. Joint release is used along with imprinting to work on releasing the body downward. While in the supine position, the student releases the spine through imprinting. He or she then uses circular movements of the legs and arms to unlock the joints of the body.

While there are variations of the Pilates method, there are essentially two schools of practice: the repertory approach and modern Pilates. The repertory approach most closely follows the original exercises developed by Pilates and the later ones by Friedman and Eisen. These exercises allow for few modifications based on body types and continue to promote the flat back approach along with squeezing the buttocks to assist with postural control. Modern Pilates uses Joseph Pilates’ philosophy and modified principles with exercises like Pre-Pilates to gradually introduce its movements. Another branch of Pilates is Stott Pilates, which was founded by Moira Merrithew and Lindsay G. Merrithew in the 1980s. Stott Pilates was developed with physical therapists to keep in mind current scientific research. The beginning focus is on understanding the body and increasing awareness, connecting the breath to movements, and making sure the correct muscles are working. These exercises may be targeted to each student’s need and body type.

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200 Ibid., 57.
201 Ibid., 58.
203 Ibid., 281.
204 Ibid.
Concepts for Postural Alignment and Body Awareness in Singers

Pilates’ principles are applicable to singers work in body awareness and alignment. The focus on breathing patterns during movements, posture and coordination are the primary benefits for singers. The concepts of Pre-Pilates are even more focused on postural alignment, breathing, and tension release in order to prepare the student for Pilates.

Pilates’ six main principles, as well as the two added later, are useful to enhance a singer’s body awareness and alignment. Concentration is extremely important for singers both physically and mentally throughout their practice and performance. Centering and breathing are related in singing, as one must become highly sensitive to the use of the abdominals and diaphragm during the respiratory cycle. The word “control” is often avoided in singing as it usually leads to an overly forced action. The muscles of the larynx and breath mechanism must be controlled by the singer but still remain flexible as opposed to rigid and tense. The term “coordination” reflects a more accurate depiction of this principle. Precision is useful for how the body is aligned. The movement of the neck and head and the placement of the body must be precise for optimal singing efficiency. The flowing movement concept can also help singers understand the need for flexibility of the body for better posture. Isolation and routine may help singers practice their posture the same way they practice a song or aria. Isolating and being aware of the position of one area of the body will reinforce good habits. Making these practices of body awareness and alignment routine will help the student see results and improvement in the body as well as the voice.

Although Pilates has become very popular with dancers, some singers and voice teachers use it less often. This is due to some of the techniques used in the Pilates practice. Pilates does pay special attention to a breathing pattern much like yoga, but Pilates teachers often use a breath
that is audible for inhalation and exhalation. This breathing is contrary to breathing for singing, which calls for quiet inhalation to ensure a deep, low breath.\textsuperscript{207} Pilates also focuses the breath in the chest, does not release the abdominal wall, and does not encourage the anterior expansion of the lower ribs.\textsuperscript{208} Although some breathing techniques for singers call for a ‘tuck’ of the lower abdomen, these postures are not aligned with \textit{appoggio} breathing. This breath technique requires the lowering of the diaphragm and outward expansion of the abdominals and lower ribs. Joan Melton, author of \textit{Pilates and the Actor/Singer}, suggests that with the help of voice specialists, a modified breathing pattern for Pilates can solve this issue while still allowing singers the benefits of the method. Pilates does explore the use of lateral expansion of the ribs, which is often a less utilized area for new singers.\textsuperscript{209} Even though this expansion may be too high in the ribcage, singers not used to expanding the ribcage for any breathing might find Pilates helpful in exploring this area of movement in the body. Modern Pilates also encourages a neutral pelvic floor, which helps the release of the lower abdominals if the singer does not tuck the abdominal wall after breathing. The audible breath is meant to be cleansing and make the student aware of his or her breathing.\textsuperscript{210} This breath is easily modified so that singers are not expected to gasp but be aware of a deeper breath that is also needed for singing. There are numerous branches of yoga and Pilates so the idea of modifying this method to fit the needs of the singer is not an extreme concept. Students can find several other alternative Pilates classes including a combination of yoga and Pilates called “Yogilates.”\textsuperscript{211} Diane Sussman, both an Alexander Technique teacher and Pilates instructor, writes about combining the two methods in her


\textsuperscript{208} Ibid.

\textsuperscript{209} Ibid., 4.

\textsuperscript{210} Ibid., 5.

teaching. Pilates’ focus on core stability helps build the strength needed for good body alignment. This practice allows Alexander Technique’s focus on alignment to be more affective. In turn, Pilates focuses on actively “doing” an exercise or engaging specific muscles to strengthen the body. Any kind of aggressive exercise can take away from the process and attention to form. Alexander Technique’s principle of “non-doing” and “means-whereby” allows students to focus on the process of movement as well as the physical exercises used in Pilates. The increased awareness also enables the student to be conscious of over tensing the muscles or pushing the body too far while still becoming stronger and more efficient with his or her movement.²¹² Another adjustment Sussman makes is modifying the Pilates breath to the Alexander Technique’s whispered “ah.” Students focus on breathing while still engaging the core muscles.²¹³ The combination of these methods might be another way for singers to use the Pilates method without sacrificing good vocal technique.

²¹³ Ibid.
CHAPTER 9

A Comparison of Feldenkrais Method, Alexander Technique, Yoga, and Pilates

The Feldenkrais Method, Alexander Technique, yoga, and Pilates are all methods that use the mind-body connection to help facilitate body awareness and teach the body to function more efficiently. This efficiency focuses largely on improving body alignment through various movements, exercises, and careful thought. Each method has its own background and philosophy, but they have many similarities as well. The Alexander Technique and Feldenkrais Method may have some similarities due to the fact that Feldenkrais met Alexander at one point and studied with one of his students, Wilfred Barlow.²¹⁴ Mehling et al.’s article, “Body Awareness: a phenomenological inquiry into the common ground of mind-body therapies,” includes comparisons of yoga, Alexander Technique, and Feldenkrais. Although this article does not include Pilates, this method may be considered based on Mehling’s descriptions of commonalities in these methods’ theories and practices.

Theoretically, each of these methods agrees on two key ideas. The first is the view of “self” encompassing both the mind and the body. The second is the embodiment and integration of self into everyday life. These methods conclude that the mind and body cannot be viewed as separate entities.²¹⁵ Each method makes this connection of self-awareness. Yoga and

Pilates use poses or a series of poses to connect the body and mind. Iyengar believed that the poses of yoga could teach students to become highly sensitive to the body. He felt this sensitive awareness of the body would combine with the intelligence of the brain and allow the heart and brain to work in cooperation with the body.\textsuperscript{216} Pilates’ principle of concentration says one must motivate the mind to become active before a physical action happens.\textsuperscript{217} The Alexander Technique and the Feldenkrais Method use slow movements that often mimic everyday movements, like sitting in a chair. Alexander uses the idea of “non-doing” to teach students to mentally inhibit a physical action. He then instructs students to redirect movement to be more efficient. The Feldenkrais Method also uses slow movements for improving efficiency, but in this method teachers make a point not to direct students to a specific outcome. Instead, students are encouraged to explore movement in the hopes that they will find better ways of functioning for their body. In each method, one must consciously make a movement or inhibit it. The methods challenge students to bring their innate human capacity for embodiment to a conscious level for long-term progress in their everyday life.\textsuperscript{218}

The theoretical ideas of the mind-body connection and development of self-awareness manifest themselves into the actual practice of each method. While there are similarities in the ideas of these methods, the actual practice of each has some differences. Each method encourages proper breathing in its practice.\textsuperscript{219} These methods acknowledge that the body’s organization is essential for the ease of breathing. Breath is often used to help connect the body

\textsuperscript{218} Wolf E. Mehling et al., “Body Awareness: a phenomenological inquiry into the common ground of mind-body therapies,” \textit{Philosophy, Ethics, and Humanities in Medicine} 6, no. 6 (2011): 5, accessed December 19, 2011, \url{http://www.peh-med.com/content/6/1/6}.
\textsuperscript{219} Ibid.
and mind in these methods. Proper breathing or the use of a particular breath pattern helps to release tension in the body and allows the breath to move more efficiently. Even with the importance of breath, each method has its own philosophy about how it should be used directly or indirectly. Yoga’s breathing practice, pranayama, uses many different patterns to relax or energize the breath. Pilates’ principle of ‘breathing’ is used to help develop strength, flexibility, length, and concentration. The audible breath usually associated with Pilates is part of the concentration concept. The overall philosophy of Pilates’ breathing shows its importance in this method even if it is a different style of breath management than some singing techniques, like appoggio. Feldenkrais and Alexander believed that good organization of the body would lead to better breathing. The Feldenkrais Method’s approach does not focus on breath directly. Instead this method encourages self-exploration, which includes flexibility of the chest, in addition to the ribs and lower torso, so that there is no inward collapse upon singing.\(^{220}\) Holding the abdominal wall is discouraged, as it restricts the necessary movement of the diaphragm and hinders the free movement of air.\(^{221}\) Alexander Technique’s focus is also less direct than Yoga and Pilates, but it is less exploratory than the Feldenkrais Method. Alexander Technique’s emphasis is on primary control, the alignment of the neck and head, which helps to create a more directed movement. The breath is then expected to become more efficient as a result of primary control rather than forcing it into a specific pattern.\(^{222}\) This idea goes along with Alexander’s ‘means-whereby’ principle. If the position of the body is more efficient, the breath will coordinate itself.

Alexander was also more focused on exhalation than inhalation. If the body was not restricted

\[^{221}\text{Ibid., 75.}\n
and the student did not hold his or her breath, Alexander felt that inhalation would be more efficient. The student could then let the right amount of breath enter the body. This means that the singer should not position him or herself into a specific posture for breathing but should be aware that he or she must constantly adjust the body depending on his or her needs each day. This idea recognizes that posture is a dynamic action, and the body must remain active for breathing and singing rather than rigid. Alexander did use one exercise for breath with his ‘whispered ah.’ This exercise, done in any number of body positions from sitting to the supine, allows the student and teacher to hear any muscular or mechanical forms of force or restriction in the breath. A student of Alexander, Frank Pierce Jones, documented the use of the ‘whispered ah.’ Jones said that Alexander used the exercise to first work on an unprepared exhalation. This unprepared release would retrain breathing habits and keep students from restricting the body. Many voice teachers take a similar approach to breathing. In her book, *Freeing the Natural Voice*, Kristin Linklater discusses similar exercises to help release the breath. She instructs students to “sigh out a hum or tone.” This exercise, much like the ‘whispered ah,’ is meant to condition a combined emotional and muscular release at the beginning of each sound.

Another common practice for these methods is the use of training and repetition. These methods must be practiced to be effective therapeutically and physically. In particular, Alexander Technique and Feldenkrais teachers call their methods re-educational. All of these methods use a student/teacher relationship instead of a patient/therapist one. This is significant...
because it calls for a learned skill that must be practiced much like the musician student/teacher relationship.\textsuperscript{227} Alexander Technique adds a psychological element to its method as it educates the student to control physical movement by deciding to move before the movement actually happens.\textsuperscript{228}

During training or lessons, Alexander Technique focuses on chair and table work, and students practice sitting, standing, and lying down while maintaining proper head position and body posture. Alexander’s principles could be used on a number of other tasks based on the every day movements used in classes. However, he emphasized the importance of “sending directions” so students would avoid slipping in to mindless repetition. He wanted to make sure students went through these steps to inhibit poor movement with each class and then applied these directions to their daily lives. Mirror work is also crucial in Alexander technique so that students make sure they are maintaining the proper head and body positioning.\textsuperscript{229} Students are asked to use visual cues to sustain positioning rather than just proprioception. These visual cues might help students avoid misleading proprioceptive feedback that has come to feel “correct,”\textsuperscript{230} Classes are usually one-on-one, and there is a focus on a hands-on methodology with a teacher helping to guide movements and reposition the student.\textsuperscript{231} Basic movements are repeated during lessons in the hope that over time, the body’s alignment and functioning will become more efficient.

Feldenkrais Method’s Awareness Through Movement (ATM) classes are often taught with students lying down. ATM students are usually guided verbally through movements that

\textsuperscript{228} Ibid, 814.
\textsuperscript{229} Ibid., 815.
\textsuperscript{230} Ibid.
\textsuperscript{231} Ibid.
explore the relationship of body positions and space. These classes, unlike Alexander Technique, are less guided. Students are encouraged to experiment with their movements, and teachers rarely correct students. Instead they might offer other options and allow the student to experiment to find his or her most efficient movement. Function Integration (FI), which is a class for individual students with a teacher, use a hands-on methodology like the Alexander Technique. However the goal of FI classes is still more about spontaneous functional movement.\textsuperscript{232}

Yoga classes use standing, lying and seated positions for training. Hatha yoga uses fluid movement between a series of positions or more static positions to help align the body. Classes allow students to improve their concentration and master these poses, but there are numerous poses and combinations of movements to challenge students.

Pilates is similar to yoga with its mat work, and it often uses the same or similar poses, usually with a different name. For example, the yoga pose ‘Cobra’ is called ‘Swan’ in Pilates. Fluid movement is essential in Pilates, although, this movement is usually within one exercise rather than movement through a series of poses. In addition to mat based classes, a Pilates class may use machines specifically designed for Pilates. The Reformer, which has a bed-like frame, a rolling carriage on it, and springs, is used for exercises lying down, sitting, standing, pulling the straps, and multitude of other positions. The Wanda chair, which is a box with one side that can be pressed down against the resistance of springs, is also used to aid many Pilates exercises.

Through training and repetition, students in each method are taught to notice sensations of the body as well as thoughts connected with each movement. In addition to noticing movement, students must then discriminate and discern when movements are more efficient or when the body is not properly aligned. These tasks awaken the mind-body practice needed for

\textsuperscript{232} Ibid., 818.
embodiment. Alexander Technique and the Feldenkrais Method believe that habitual movements cause movement problems and patterns of poor body functioning. Both methods use techniques that teach students, over time, to differentiate subtle movements to allow for greater awareness of the body and its functions, such as posture. The Feldenkrais Method develops the student’s awareness through exploratory movement, and Alexander Technique uses the principle of inhibition and redirection. Pilates’ principles of concentration, control, precision, and fluid movement, teach a similar belief in the awareness of the body and increasing strength with efficient movement. Yoga’s teachings are less focused on changing habitual patterns, but it does work on the body’s posture, its fluid movements, and being able to consciously bring focus into one direction while still sensing how the body is working as a whole. Iyengar had strong ideas about the importance of mind-body integration, but since a regular yoga class may not address this connection, a student would need to pursue studies on yoga’s philosophies on their own in order to fully understand the mind-body connection. Pilates developed his principles on the basis of health and function, but his principles do support a mind-body connection. His own studies of eastern philosophy and yoga influenced the development of his method. Yet, as Pilates had become somewhat of a fitness craze in the last ten years, the principles behind the method have a tendency to be overshadowed.

The focus on self-awareness in each of these methods points to an ultimate goal of the integration of the mind and body as part of one’s daily life.\textsuperscript{236} According to Mehling, a shift in one’s awareness with these types of methods may help engage self-regulation and self-care in a new way. People may learn to deal with body sensations and then adapt movements and behavior in response. Self-care may lead people to correct poor posture or movement before pain or bad habits form rather than ignoring the body’s signals.\textsuperscript{237}

Any of these methods may help singers increase their body awareness so they realize the entire body’s alignment and movement is essential for efficient and healthy singing. Even with the slight differences in practice and training, each method encourages the student to seek better self-awareness and excellent alignment to enable the body to function more efficiently. In particular, breathing is a task that these methods address either directly or indirectly. Ease and efficiency of breathing is essential to a singer. Along with proper alignment for breathing, the ease of general body movement is also invaluable to a singer. Aside from the physical demands of vocal production, singers must remember their lyrics and staging while being constantly aware of the collaborative ensemble that supports them whether it is a piano or an entire orchestra. If the singer is not able to move freely during a performance, he or she will not be able to concentrate on these other tasks as successfully. Yoga, Pilates, Alexander Technique, and the Feldenkrais Method do not separate the mind from the body. They teach students that the mind-body connection is a powerful skill that must also be developed. Singers both technically and expressively must be aware of their entire instrument in order to make refined adjustments when necessary. These methods give students more opportunities to develop self-awareness skills of both the body and mind. These heightened senses can be an important asset to a singer.

\textsuperscript{236} Ibid.
\textsuperscript{237} Ibid., 9.
CHAPTER 10

Medical Research

There is growing interest for research into therapeutic mind-body methods. This interest supports a cross training of disciplines for achieving optimal postural alignment and body awareness in performing artists. The medical problems of singers, instrumental musicians, and dancers are a unique area of clinical interest. A large portion of musicians experience chronic pain due to the repeated actions used to play instruments. Singer’s have a particular interest in musculoskeletal patterns, which help with breathing and supporting the structures of the larynx. Performing artists are expected to perform at an extremely high level consistently in public and, often, despite illness or fatigue. Many doctors are not aware of the special occupational and health-related challenges facing these performing artists, and there are few formal training programs in performing arts medicine.

Fortunately, in the last twenty-five years the need for medical support of performing artists has grown. In 1983 a group of doctors who had been involved in the medical care of musicians held the first Symposium on the Medical Problems of Musicians in Aspen, Colorado. In 1986 the scientific journal Medical Problems of Performing Artists was founded under the leadership of Dr. Alice Brandfonbrener. Dr. Brandfonbrener was the journal’s first editor-in-

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chief and later became the founding President of the Performing Arts Medical Association (PAMA), which was incorporated in 1989.\textsuperscript{241} Membership in PAMA was initially limited to physicians, but it now includes many different types of health professionals, performers, educators, and arts administrators.\textsuperscript{242} PAMA’s mission is to promote high quality care to performing artists and to educate both performing artists and those in the medical fields about the special needs of this population. PAMA also fosters medical research in the performing arts and promotes communication between these two groups.\textsuperscript{243} Branfonbrener has stated that the success of medical practitioners in the performing arts is dependent upon their willingness to use nontraditional examination techniques such as observing a musician in practice. She also tries to help doctors understand the reluctance of musicians to seek medical help. Musicians often believe that some discomfort is part of the musician’s life. They fear a loss of income, and they often feel threatened that they will have to make impossible changes to their technique.\textsuperscript{244} However, many of the injuries and discomforts affecting musicians are preventable. The effort to help musicians must be both physical and psychological.\textsuperscript{245}

In addition to her work with PAMA, Dr. Branfonbrener founded the Medical Program for Performing Artists (MPPA) at Northwestern in 1985. The program has been a part of the Rehabilitation Institute of Chicago since 1990.\textsuperscript{246} As one of the few programs of its kind, MPPA offers comprehensive performance-based medical evaluation and treatment to performing artists at all levels. MPPA also works to help artists prevent re-injury through educating patients about

\begin{itemize}
  \item \textsuperscript{242} Ibid.
  \item \textsuperscript{243} Ibid.
  \item \textsuperscript{245} Ibid., 38.
\end{itemize}
body posture and mechanics. They use Feldenkrais and Pilates-based techniques in physical therapy and strive to help artists adapt their behaviors to improve functioning and performing abilities. Speech-language pathologists in this program also teach voice patients healthy posture habits and breathing techniques for singing and speaking.²⁴⁷

The Voice Foundation’s *Journal of Voice* is another important professional publication. It is a peer-reviewed publication for voice medicine and research.²⁴⁸ This journal often addresses the physical issues of both amateur and professional singers. A search of voice and posture related articles in this journal identified several notable studies. A 1997 article by Schneider et al. discusses the use of exercise physiology principles for improving postural alignment in vocal performance. The article suggests that strengthening synergistic muscles and finding a balance between agonistic and antagonistic muscle activity would promote improved posture in singers.²⁴⁹ Rubin’s article, “Musculoskeletal patterns in patients with voice disorders,” discusses how recently the fields of osteopathy and physiotherapy have been applied to vocal problems. The findings in the article found twenty-six voice patients who were thought to have postural issues as a part of their vocal problems.²⁵⁰ A pilot study also done by Rubin, et al. assessed the putative involvement of the transabdominal muscles in dysphonia.²⁵¹ It has been noted that chronic shortening of the rectus abdominis strains the entire body while the neck and cervical spine are then forced to compensate. As these periabdominal muscles are essential for

²⁴⁷ Ibid.
supporting respiration, their shortening might inhibit voice projection. Rubin theorized that neck problems associated with inefficient use of these abdominal muscles might lead to or worsen voice problems and reinforce musculoskeletal abnormalities in the neck. No firm conclusions were found in the study, but it did show that under-activity of the transabdominal muscles were found in the large majority of dysphonic patients with muscle tension dysphonia. Bruno et al.’s article on voice disorders and posturography studied the postural patterns of patients during voice production by means of static posturography to see whether there was any difference in postural patterns between healthy subjects and those with voice disorders. Posturography is a term that includes all the techniques used to quantify postural control in an upright stance in either static or dynamic conditions. Static posturography records the forces applied by a person’s feet on a supporting surface to keep the body’s center of gravity within the body’s ground projection. The study stated that active contraction of the diaphragm, abdominals, and extrinsic laryngeal muscles during voice production might cause a loss of postural balance or a less effective posture alignment. This postural imbalance might be the result of the alteration of the body’s proprioceptive scheme even in healthy individuals. This study found that voice training helped both the healthy subjects and those with voice disorders. Since an individual’s proprioceptive scheme can be altered by muscular contraction during phonation, Bruno et al theorized that vocal training techniques such as correct breathing behavior, relaxation of the hypertonic muscles before and during phonation, and improvement of the muscular contraction awareness helped improve the subjects’ posture during voice production. Articles such as “Considerations for Maintenance of Postural Alignment of Voice Production” by Wilson et al

252 Ibid., 221.
254 Ibid.
255 Ibid., 74-75.
address postural problems in singers with specific exercises to aid voice therapists. These
exercises emphasize altering the alignment of the cervical and thoracic spine. This article
links the work of physical therapy and voice therapy to a combined effort that may help singers.
A more recent case report on physical therapy as a method to optimize posture in classical
singers found that the case study student was able to alter her postural alignment over a period of
four months, and this alteration could influence some of her vocal parameters. The subject
had a greater singing frequency range and had an initial increase of dynamic range. This case
report did require frequent repetition of the stabilizing exercises, and such a demand of a
person’s time might indicate compliance issues for many patients. “The Activity of Neck
Muscles in Professional Classical Singing” by Pettersen and Westgaard investigates the level of
neck muscle tension involved in singing and EMG biofeedback as a method for reducing upper
trapezius and sternocleidomastoideus muscle activity. In this study singers were able to lower
the use of these muscles as well as the scalenus and posterior neck region when they looked at a
monitor showing their recorded muscle activity. This type of imagery and body awareness
directly affected the singers’ neck, shoulder, and head positions and the muscle activity involved.
These articles from the Journal of Voice show an important link between the voice and the body,
and they offer potential for continued research into the combination of voice and physical
therapy.

The only clinical study available to this researcher that combines the work of physical
therapy and voice therapy work with singers is the Wilson et al. article. However, there has been

256 Barbara M. Wilson, “Considerations for maintenance of postural alignment for voice production,” Journal of
257 Filip F Staes, Filip et al., “Physical therapy as a means to optimize posture and voice parameters in student
258 Ibid., e99.
259 Viggo Pettersen et al., “The activity patterns of neck muscles in professional classical singing,” Journal of Voice
an increased interest in body alignment and awareness techniques and methods due to their potential to help patients in numerous populations. As the practice of physical therapy includes motivating patients to become part of the learning process, body awareness may be an integral part of successful long-term rehabilitation. Physical therapists are starting to explore different body awareness methods more in order to better observe dysfunctional movements. Skjaerven’s article on promoting movement quality in clinical practice points to a study in which basic body awareness therapy was used for violinists. She suggests that such therapy work might benefit musicians. More research into the combination of physical therapy, voice therapy, and body awareness methods for performing artists could further help to diminish patients’ injuries and pain associated with poor alignment or movement quality.

Despite many articles available, research evaluating the scientific merit of the Alexander Technique, the Feldenkrais Method, yoga, and Pilates is limited and findings are variable from study to study. There are few blinded and controlled studies on the Alexander Technique and Feldenkrais Method that are objective or have standard outcome measures published in peer-reviewed journals. Much of the available literature involves case studies and testimonials of the effectiveness of these methods. However, these articles do not provide sufficient scientific weight. Often the challenge lies in the need for dedicated patients and the need to assess the impact of treatment over a long period of time rather than over a few lessons.

Schlinger’s 2006 article on the use of Feldenkrais, Alexander Technique and yoga in the performing arts found seventy-one randomized controlled trials on yoga, but no specific

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261 Ibid.

controlled trials of yoga with performing artists.\textsuperscript{263} Other populations were reviewed, such as persons with low back pain, high school long distance runners, and those with multiple health issues such as anxiety, asthma, hypertension, and depression.\textsuperscript{264} Most studies have shown some significant improvement with pain, motivation, and conditions after taking yoga classes for a period of time.\textsuperscript{265} When focused specifically on posture and body awareness, research like McKenzie’s study on the “Cobra” pose shows that yoga can influence the musculoskeletal and nervous systems through the mobilization of joints and nerves.\textsuperscript{266} Other research has shown that yoga has helped improve patients’ postures in the areas of head protrusion, asymmetry of the shoulders and hips, and in decreasing anterior pelvic tilt.\textsuperscript{267} Studies with yoga have also found it helps reduce body tension and stress leading to better relaxation, concentration, and perceived self-efficiency.\textsuperscript{268}

Research in clinical literature on Alexander Technique does show some significant improvements, especially over a long period of time. A study on balance by Dennis found a small improvement in functional reach with his Alexander group compared to pretest scores and a control group.\textsuperscript{269} Functional reach is the difference between the arm’s length and maximum forward reach using a fixed base of support.\textsuperscript{270} A study on pulmonary function and Alexander Technique found statistically significant increases in peak expiratory flow as well as inspiratory

\textsuperscript{264} Ibid., 873.
\textsuperscript{265} Ibid.
\textsuperscript{267} Ibid.
\textsuperscript{268} Ibid.
and expiratory mouth pressures. The improvement was attributed to the increased length of muscles of the torso. This increase was due to inhibited slumping patterns in posture and the increased strength of the abdominal muscles with improved posture.\textsuperscript{271} Recent reports have also found Alexander Technique to be clinically beneficial for Parkinson’s disease and back pain.\textsuperscript{272} The results of Stallibrass’ study showed no significant changes in pain for the Alexander group over twelve weeks, but it did find significant changes at six months. Ernst and Canter’s study, however, did not find significant changes in their Alexander group over twelve months.\textsuperscript{273} One study from 1995 tested the effects of Alexander Technique on music performance in low and high stress situations. The Alexander group did show improvement relative to the control group in stress on mean heart rate and overall musical and technical quality.\textsuperscript{274} There was little significant impact on the participants’ height and peak breath flow.\textsuperscript{275} A more recent study by Woodman and Moore published in 2011 found that Alexander Technique lessons led to significant long-term reductions in back pain compared with typical general practice care.\textsuperscript{276} Another study from 2011 assessed Alexander Technique’s effect on movement coordination and found that Alexander teachers did alter their movement coordination when raising themselves from a chair compared to the matched control subjects.\textsuperscript{277} A study by Cacciatore from 2010


\textsuperscript{273} Ibid.


\textsuperscript{275} Ibid., 132-133.


studied postural tone in Alexander Technique teachers and the short-term effects of Alexander training in patients with low back pain. Postural tone is the ongoing subconscious muscular activity that is needed to maintain the balance of the body in different positions and keep the body from collapsing against gravity.278 The study found that teachers, considered the normal population, did have better postural tone than those with low back pain. After ten weeks of Alexander Technique training, those with pain had decreased stiffness in the trunk and the hips. The results suggest that training may influence dynamic modulation of postural tone.279 Although there are conflicting findings throughout the studies that exist on Alexander Technique, there is past and recent evidence for its usefulness in improving coordination and posture, especially with long-term practice.

Feldenkrais Method has also been used in studies on pain management and other ailments. One study with multiple sclerosis patients found that Feldenkrais classes and sham sessions showed significant outcomes, but only in perceived stress and lowered anxiety. The Feldenkrais Method also had non-significant trends towards higher self-efficiency.280 Malmgren-Olsson and Branholm’s study found that Feldenkrais and Body Awareness Therapy improved health-related quality-of-life and self-efficiency compared to conventional physiotherapy, although these findings were not statistically significant.281 A German study found that Feldenkrais was able to improve body perceptions in patients with eating disorders.282 There is disagreement in the medical literature as to whether or not Feldenkrais affects one’s

279Ibid.
281Ibid.
motor behavior. Buchanan and Ulrich wrote a 2001 article suggesting that Feldenkrais seemed to have parallels with the dynamic systems theory on motor behavior. This theory regards humans as self-organizing systems and that behavior develops from the interaction of multiple subsystems, such as experience. This system is flexible and reorganization of behavior patterns may happen gradually or rapidly. Ives responded to this article with a critical review of existing literature about the Feldenkrais Method in 2003. He suggested that the self-regulation theory of goal identification and integration for change would be more accurate as a framework for research rather than the use of kinesthetic models and motor performance measures. His suggestion was based on the fact that in most studies Feldenkrais was not shown to be a better treatment compared to others. The positive effects of the method seemed to be psychological and not physical. Buchanan and Ulrich submitted a response to this article and argued that Ives was suggesting that the mind and body had no connection. They relayed that any attempts to regulate a person’s behavior would have to draw attention to the body’s physical position, sensations, and actions. They suggested that experiments should be conducted to determine if Feldenkrais could affect the psychological realm without impacting the physical realm. A 2010 study by Connors et al. expands on this idea to better understand the possible mechanisms


behind the effectiveness of Feldenkrais classes. The results found that these classes enhanced the motor skill elements of internal feedback, repetition, and variability of practice through exploratory learning. However, extrinsic feedback on motor skill learning was mostly absent from lessons. This lack of extrinsic feedback seems to be a deliberate plan in the Feldenkrais Method due to the importance of exploratory learning. The teacher guides the student in the best movement for him or her rather than giving exact instructions on movements. This study also described postural control skills developed during classes. Connors found coordination of ankle, hip, and trunk synergies was practiced. In addition, this method practiced controlling movements of the center of mass in different directions using different bases of support, such as shifting weight from one foot to another. In particular, Feldenkrais classes practiced extensive use of trunk flexibility and control during balance activities. In later lessons, Feldenkrais also used dynamic stability exercises, like walking. A Swedish study from 2011 involved prolonged and non-specific neck and shoulder pain in women. This qualitative study had several notable findings. The participants found the effects of Feldenkrais lasted longer than other methods, such as massage therapy. The women felt that their posture, balance, and breathing had improved as well. They became more aware of muscle tension in their body and increased their overall body awareness. However, even though these women felt their Feldenkrais classes were helpful, they expressed that they were unsure if they performed the movements correctly. They found the movements difficult to remember, and therefore, they were often

288 Ibid.
289 Ibid., 333.
290 Ibid., 332.
291 Ibid.
unable to recreate the movements at home. The Feldenkrais Method’s exploratory learning approach seems to have some lasting effects on its students, especially in increasing self-regulation and efficiency in body awareness. Yet, too much dependency exploratory movement without enough feedback and difficulty continuing the exercises outside of classes might cause students to abandon the method before positive effects may be noticeable. Questions about how the Feldenkrais Method’s effect on motor and psychological behavior continues to be an area of interest in the medical field. This research as well as research into the Alexander Technique is difficult to assess. Based on some of the most recent clinical research, it seems reasonable to consider Feldenkrais and Alexander Technique to be important body awareness methods. Continued research into the mind-body connection is essential to assess the affects of these methods on changing inefficient habitual behaviors, such as poor postural alignment.

Despite Pilates’ 80-year history, there has been little empirical research on its claims to improve muscular strength, endurance, balance, and flexibility. More recent research, however, has shown some positive results for those using this method. Bernardo’s 2007 review of literature on Pilates found many articles on Pilates but only thirty-nine articles and abstracts in professional journals. Of these articles, ten were research studies with five conducted in dancers and gymnasts and three in healthy adults. The studies on dancers showed that Pilates can enhance dancers’ flexibility, strength, alignment, and performance. One study in healthy adults found that the Pilates group had a better contraction of the transverses abdominis muscle with better lumbar-pelvic stability. Another study from 2004 found the Pilates participants had

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293 Ibid.
296 Ibid.
improved composite truncal flexibility over six months. The third study found Pilates exercises
with a resistance band increased muscle activity by fifty percent. A 2006 study showed the
use of Pilates in older adults did improve postural stability. Another 2006 study tested trunk
strength, endurance, and flexibility in healthy adults. It also found a positive effect of Modern
Pilates on lower back and abdominal strength as well as abdominal endurance and trunk
flexibility. A recent study on Pilates from 2010 again found low-intensity Pilates exercises
can improve individuals’ muscular endurance and flexibility. Interestingly, this same study
found that participants increased their mean height compared to the control group. This increase
appeared to be more structural since gross changes were not found. However, this finding
suggests some basic postural improvements due to increased muscular strength.

Within the available research on the use of the Alexander Technique, the Feldenkrais
Method, yoga, and Pilates for performing artists, little clinical research exists on their
effectiveness with singers. There is one study from 1963 that showed improvement in singing
quality when Alexander Technique principles of head balancing were used. With early studies
such as these and Alexander’s background as a performing artist, it is not surprising that
Alexander Technique has been widely accepted in theatre and music schools. It is even part of
the curriculum in many training schools, such as The Julliard School. Yoga and the Feldenkrais
Method are becoming more popular methods for singers, and while Pilates has had a long
association with dancers, this method is also beginning to crop up in other areas of the

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297 Ibid.
300 Ibid., 666.
performing arts. There is strong anecdotal evidence of the benefits of all the described methods with performing artists. However, other studies of unbiased, clinical research on these body alignment and awareness methods and their effectiveness on singers is lacking. In addition to the difficultly recruiting dedicated patients for this type of research and the necessary time to evaluate the methods, there are other problematic concerns. Most postural studies use a more global concept of posture applied to special populations, such as those with cerebral palsy or chronic back pain to name a few. Studying someone who is within the normal limits of posture may cause a method, like Pilates, to have a more blunted effect.\textsuperscript{302} In this case, typical methods of postural analysis are not sophisticated enough to detect small changes, which might be very relevant in populations that often seek more subtle improvement. Performing artists, singers in particular, would fall into the type of population that would require a new scale of effectiveness to assess the nuances of refined postural alignment and body awareness needed for singing professionally. Increased body awareness is also a challenge to evaluate and measure for improvement in an individual within the normal population. Mehling suggests the need for a broader biomedical paradigm to consider embodiment, not only to better understand how mind-body enhancement methods work, but also to end the notion of a mind-body split that may still persist in the biomedical model.\textsuperscript{303} Singers and their teachers may learn from this conclusion so they recognize that singing requires the focus of the body and mind together. The coordination of postural alignment and self-awareness of the body is essential for singers. More research into


the refined skills of the body and mind is needed to help singers be better performers and teachers.
CHAPTER 11

Practical Application of Body Awareness and Alignment Methods

In addition to the many articles and medical research studies available, methods such as the Alexander Technique, the Feldenkrais Method, yoga, and Pilates, continue to come up in both academic publications and non-academic publications geared towards performing artists, particularly singers. *Classical Singer* magazine has had a number of articles evaluating the benefits of these and other body movement methods, and there are a number of online classical singing recourses with similar articles. Professional groups, like the National Association of Teachers of Singing, as well as a growing number of universities are starting to include workshops and seminars addressing body alignment and awareness methods. In one article published in *Classical Singer*, voice teacher and Alexander Technique instructor, Mary Jean Allen, says that singers will benefit immensely from training kinesthesia so that they may become fully aware and responsive to the size, quality, and location of movement.\(^{304}\) She goes on to say that singers with poor posture are not always slumping, but they may exhibit posture or movement that is too rigid. Both patterns interfere with good singing, and singing may improve with a more balanced posture and movement.\(^{305}\) In the same article, yoga and voice teacher Judith E. Carman points out that certain roles require special movements or postures that may alter a singer’s alignment. An example of this is the hunch-backed character Rigoletto.\(^{306}\) A director might even have a singer crawling across stage while singing. A singer must still be able


\(^{305}\) Ibid.

\(^{306}\) Ibid.
to project a healthy, and fully supported sound ideal for classical singing. Characters dying on the stage are often singing while lying down or in other less than ideal positions. Singers must learn how to adapt their bodies for certain roles or special movements on stage. Good body awareness and alignment will allow the singer to take on these challenges and still sing well. Body awareness and alignment methods remind the singer that singing is a whole-body activity. The skills needed for adaptation are the abilities to observe and analyze movement and then establish new patterns. This physical coordination is necessary for learning to sing. When this singing coordination is combined with vocal technical work, it may have a significant impact on the singer’s overall performance. In 2005, the Metropolitan Opera’s Lindemann Young Artist Development Program began offering movement classes to its singers. These classes focus on adjusting habitual posture and walking styles as well as simple dance movements. Bringing the body and brain closer together for a greater awareness of what the body is doing is the goal.

Voice teachers and singers have many possibilities to explore with body alignment and awareness methods, but with all the expected training that must happen while a student is in school, it can be challenging to fit anything else into a one hour weekly lesson. Not every school can have weekly or even monthly classes on body alignment and awareness. This dilemma led me to wonder if teachers are addressing these issues or using any of these methods in their teaching. A survey using Survey Monkey software was developed to see what is currently being taught or not taught, specifically using Alexander Technique, the Feldenkrais Method, yoga, and Pilates. I also asked if teachers used these methods themselves or encouraged their students to

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308 Ibid.
seek outside work in these areas. The following chapter presents the survey developed for this document and discusses the results.
CHAPTER 12

Survey Analysis and Discussion of Results

Method

The knowledge gained from research on Alexander Technique, the Feldenkrais Method, yoga, and Pilates and their potential benefit to singers led to a survey to ascertain whether professional voice teachers use any of these methods in their teaching. Certain questions were asked. Do voice teachers address body alignment and awareness with their students? If so do they integrate these methods into their teaching? The survey begins by asking a series of demographic questions such as the subject’s present job position, level of education, and number of years teaching. Questions concerning body alignment, and body awareness follow. Do teachers find body awareness and alignment necessary and do they see progress over time with attention and work in this area? There are several questions on the survey that include more descriptive questions and allow participants the opportunity to elaborate on the methods used and state their opinions on their importance or lack thereof.

Participants (Number: \( N = 55 \)) for this study were professional voice instructors who chose to participate in an anonymous online survey. The software for this online survey was provided by Survey Monkey. All subjects used the same survey. After collecting the surveys, Survey Monkey provided a summary report of all those who participated. The report shows the response sum and percentage for each question and the text from the open-ended responses. These responses were filtered and cross-tabbed based on various groups provided by the demographic information. Cross-tabbed data shows a side-by-side comparison of two or more
survey questions to determine how they are interrelated. Filtered data shows specific data or patterns within the results based on people’s responses. Groups developed through cross-tabbing and filtering include the number of years teaching, background education/training, and present position.

Results

The data collected from these surveys provided nominal data to create sum and percentage charts. The total sum and percentages (Survey Summary A) showed that 63.6% of the subjects thought it was always necessary to address a student’s body alignment for singing (Question 6), but only 42% said that they always address a student’s body alignment in lessons (Question 8). 53.8% thought it was necessary to always address a student’s body awareness in lessons (Question 15). When asked about the frequency (Question 9), 48.1% said that they “always” addressed a student’s body alignment during lessons if it was a new student or a student in his or her first year of study. The highest percentage of frequency then dropped down to “often” in the second year and third year of study, and then down to “sometimes” in the fourth year of study and beyond. However, the frequency for working on body awareness remained highest in the “often” category for all years of study (Question 17). This trend might indicate that while body alignment issues may be less of a concern or problem as a student studies voice, the need for body awareness work continues to be a challenge throughout a student’s growth and must be continually refined. 35.3% of the subjects said that they often used a body alignment method themselves, and 40.8% said that they used a body awareness method as part of their personal vocal practice (Questions 10 and 18). From the selection of methods used in this survey, 57.7% of the subjects said they used Alexander Technique as part of their vocal practice for body alignment and 55.8% said they used yoga (Question 11). For body awareness, 53.1% of
the subjects said they used yoga and 53.1% said they used Alexander Technique (Question 19). As for their students, subjects again used yoga and Alexander Technique the most. For body alignment, 47.8% of subjects said they used yoga with students and 47.8% said they used Alexander Technique (Question 12). For body awareness, 41.3% selected yoga as the method used with students, and 50% selected Alexander Technique (Question 20). Notably, the percentage of subjects who chose “I do not use a method” jumped from low levels of what subjects used themselves (21.2% body alignment and 22.4% body awareness) to higher percentages in what they used with students (32.6% body alignment and 34.8% body awareness). After reading the open-ended comments, this finding was clearer. Teachers seemed to feel more comfortable experimenting with methods like yoga, Alexander Technique, Feldenkrais, and Pilates on themselves but felt less qualified to use these methods in lessons since their own exposure was limited. In questions 13 and 21, percentages of those subjects who encourage their students to pursue body alignment and awareness methods outside of lessons were split between “sometimes” (42.6% for body alignment, 34% body awareness) and “often” (35.2% body alignment, 38% body awareness). In general, the total sum and percentage report indicates an overall awareness of the importance of body awareness and alignment as well as these methods for improvement. Specifically, yoga and Alexander Technique were the most used methods by teachers themselves and the most used methods with students. The percentages for Feldenkrais and Pilates were much lower.
Graph 1: Survey A Question 6

Do you think it is necessary to address a student's body/postural alignment for singing?

- 63.6%
- 36.4%
- 32.7%

Graph 2: Survey A Question 8

Do you address body/postural alignment in your students' voice lessons?

- 42.6%
- 50.0%
- 7.4%
Graph 3: Survey A Question 9

How frequently do you work on a student’s body/postural alignment in his/her voice lesson?

<table>
<thead>
<tr>
<th>Year of Study</th>
<th>Never</th>
<th>Sometimes</th>
<th>Neutral</th>
<th>Often</th>
<th>Always</th>
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<td>1st year</td>
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<td></td>
<td></td>
<td>41.4%</td>
</tr>
<tr>
<td>2nd year</td>
<td>7.5%</td>
<td>11.3%</td>
<td>29.4%</td>
<td></td>
<td>54.1%</td>
</tr>
<tr>
<td>3rd year</td>
<td>9.8%</td>
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<td>30.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th year</td>
<td>16%</td>
<td>11.6%</td>
<td>32.9%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Graph 4: Survey A Question 11

Do you, as a singer, use any of the following methods for body/postural alignment yourself? Please check all that apply.

- Yoga: 66.8%
- Alexander Technique: 100%
- Feldenkrais Method: 11.5%
- Pilates: 13.5%
- I do not use any method: 21.2%
Graph 5: Survey A Question 12

Do you, as a teacher, use any of these body/postural alignment methods with your students, if yes, then which one(s)

- Yoga: 47.8%
- Alexander Technique: 47.8%
- Feldenkrais Method: 6.5%
- Pilates: 4.3%
- I do not use any method: 32.6%

Graph 6: Survey A Question 17

How frequently do you work on a student's body awareness in lessons?

- New student/1st year of study:
  - Never: 4.0%
  - Sometimes: 3.9%
  - Neutral: 5.9%
  - Often: 47.1%
  - Always: 43.1%

- 2nd year of study:
  - Never: 4.0%
  - Sometimes: 2.0%
  - Neutral: 39.0%
  - Often: 52.0%

- 3rd year of study:
  - Never: 8.3%
  - Sometimes: 25.9%
  - Neutral: 25.9%
  - Often: 41.7%

- 4th year and beyond:
  - Never: 6.3%
  - Sometimes: 29.2%
  - Neutral: 25.9%
  - Often: 38.6%
Graph 7: Survey A Question 19

Do you use any of the following as a body awareness methods yourself as a singer? Please check all that apply.

- Yoga: 53.1%
- Alexander Technique: 53.1%
- Feldenkrais Method: 14.3%
- Pilates: 12.2%
- I do not use any method: 22.4%

Graph 8: Survey A Question 20

Do you, as a teacher, use these any of these methods for body awareness with your students? If yes, then which one(s).

- Yoga: 41.3%
- Alexander Technique: 50.0%
- Feldenkrais Method: 13.0%
- Pilates: 6.5%
- I do not use any method: 34.8%
After analyzing the total sum and percentage responses for the surveys, the information gleaned was placed into different groups based on demographic information. These groups include the number of years teaching (Survey Summary B), education/training background (Survey Summary C), and present position, specifically University and College positions (Survey Summary D).

Survey Summary B compares the sum and percentage responses of those subjects with 0 to 5 years of teaching experience with subjects who have had more than 20 years teaching experience. Most of the responses between the groups were similar, but there were noticeable differences within a few questions. In response to question 11, Alexander Technique had a slightly higher percentage over yoga in the “0-5 years” teaching (55% and 50% respectively), while yoga had the higher percentage rate in the “more than 20 years” group (58.% compared with 41.7% choosing Alexander Technique). In the same questions 0% of the “0-5” group used Feldenkrais and 20% used Pilates. 25% of the “more than 20” group used Feldenkrais and 8.3% used Pilates. Questions 12 also had noticeable results with this group comparison. The highest percentage in this question for the “more than 20” group was 54.5% selecting yoga a method they used with students. The percentage of the “0-5” group using yoga or Alexander Technique was split at 38.9%. However the highest percentage response, although not significant, was “I do not use a method” at 44.4%. The “more than 20” group showed a higher percentage of encouraging students to seek body alignment methods outside of lessons compared to the “0-5” group (Question 13). These findings were similar in the body awareness questions. There was an even higher percentage of those in the “0-5” group who chose “I do not use a method” with students (52.9%). 60% of the “more than 20” group selected yoga as the method they used with students for body awareness.
Graph 9: Survey B Question 11

Do you, as a singer, use any of the following methods for body/postural alignment yourself? Please check all that apply.

- **Yoga**: 50.0% (0-5), 41.7% (More than 20)
- **Alexander Technique**: 56.0% (0-5), 25.0% (More than 20)
- **Feldenkrais Method**: 25.0% (0-5), 20.0% (More than 20)
- **Pilates**: 25.0% (0-5), 25.0% (More than 20)
- **I do not use any method**: 8.3% (0-5)

Graph 10: Survey B Question 12

Do you, as a teacher, use any of these body/postural alignment methods with your students, if yes, then which one(s)

- **Yoga**: 38.9% (0-5), 36.4% (More than 20)
- **Alexander Technique**: 54.5% (0-5), 36.9% (More than 20)
- **Feldenkrais Method**: 27.3% (0-5)
- **Pilates**: 44.4% (0-5), 27.3% (More than 20)
- **I do not use any method**: 5.6% (0-5), 9.1% (More than 20)
Graph 11: Survey B Question 13

Do you encourage your students to pursue these body/postural alignment methods on their own in a class or privately outside of lessons?

- Never: 7.7%
- Sometimes: 38.5%
- Neutral: 15.4%
- Often: 26.3%
- Always: 15.8%

Graph 12: Survey B Question 19

Do you use any of the following as a body awareness methods yourself as a singer? Please check all that apply.

- Yoga: 44.4%
- Alexander Technique: 60.0%
- Feldenkrais Method: 30.0%
- Pilates: 27.8%
- I do not use any method: 30.0%
Survey Summary C shows the sum and percentage responses for education levels. These groups are divided into a Bachelors of Music (BM) group, a Masters of Music (MM) group, and a Doctorate of Musical Arts (DMA) group. This response table shows the cross-tabbed results. Since some participants listed themselves as holding multiple education levels, the new numbers are given below. For the BM group (N = 28), the MM group is (N = 32), and the DMA group is (N = 17). Those with MM and/or DMA degrees chose “often” in slightly higher numbers for using a body alignment method than those subjects in the BM group (Question 10). The BM group’s highest sum and percentage response for this question was “sometimes.” In the same question asking about body awareness (Question 18), the BM and MM groups showed the highest sum and percentage response in the “often” category. The DMA group was split between the “neutral” and “often” response. This finding again seems to indicate that body
awareness is even more of a concern for teachers than body alignment. For questions 11 and 19, Alexander Technique was the most chosen method for each group. Concerning the methods used with students, Alexander Technique again held the highest sum and percentage response for body awareness (Questions 20). For body alignment (Question 12) the BM and MM group also chose Alexander Technique, but the DMA group was split evenly between yoga and Alexander Technique at 53.8% or Sum (S) = 7. Question 13 showed the BM group and MM group having the highest sum and percentage in the “sometimes” category for encouraging their students to seek outside work with body alignment methods (57.1% and 46.9% or S= 16 and S= 15, respectively), while the DMA group’s highest sum percentage was “often” (41.2% or S=7). For body awareness, this sum and percentage remained the highest in the “sometimes” category for the BM group, was highest in the “often” category for the MM group, and was split between “often” and “always” in the DMA group.

**Graph 14: Survey C Question 10**
Graph 15: Survey C Question 11

Do you, as a singer, use any of the following methods for body/postural alignment yourself? Please check all that apply.

Graph 16: Survey C Question 12

Do you, as a teacher, use any of these body/postural alignment methods with your students, if yes, then which one(s)
Graph 17: Survey C Question 13

Do you encourage your students to pursue these body/postural alignment methods on their own in a class or privately outside of lessons?

- Never: 3.6%
- Sometimes: 29.4%, 46.9%, 25.6%
- Neutral: 5.9%, 31.3%, 41.2%
- Often: 10.7%, 31.3%, 21.9%
- Always: 23.5%, 14.3%

Graph 18: Survey C Question 18

Do you, as a singer, use an alternative body awareness method as part of your complete vocal practice?

- Never: 4.0%, 7.1%
- Sometimes: 14.3%, 21.4%
- Neutral: 16.0%, 14.3%
- Often: 26.6%, 42.6%
- Always: 28.6%, 14.3%
Graph 19: Survey C Question 19

Do you use any of the following as a body awareness methods yourself as a singer? Please check all that apply.

Graph 20: Survey C Question 20

Do you, as a teacher, use these any of these methods for body awareness with your students? If yes, then which one(s).
Survey Summary D shows the results of the present position group, which focuses on University/College professors. This response was filtered instead of cross-tabbed since several participants listed themselves in multiple present positions. Often University/College professors teach privately in addition to the work they do for their institution. Participants for this sum and percentage table are \( N = 24 \). 29.2% of these respondents listed more than 20 years teaching, and 15 had received their DMA and MM degrees. Questions 11 and 19 again showed Alexander Technique and yoga as the most chosen method subjects used themselves. Alexander Technique had a slightly higher percentage over yoga in the body alignment section (65.2% and 56.5% respectively), but yoga was slightly higher in the body awareness section (non-significant at 59.1% and 54.5%). Similar results appeared in questions 12 and 20 concerning methods used with students. Alexander and yoga were the highest percentages, but these questions had somewhat higher percentages for “I do not use a method” than the questions concerning what methods subjects used themselves. Questions 9 and 17 produced similar results to the total sum and percentage responses. The need to address body awareness in lessons from the first year of study through the fourth year of study and beyond maintained a higher percentage rate in the “often” and “always” categories compared to body alignment.
Graph 21: Survey D Question 9

How frequently do you work on a student's body/postural alignment in his/her voice lesson?

- New student/1st year of study: 83% Never, 12.5% Sometimes, 4.2% Neutral, 41.7% Often, 50.8% Always
- 2nd year of study: 4.3% Never, 21.7% Sometimes, 13.0% Neutral, 12.5% Often, 62.5% Always
- 3rd year of study: 21.7% Never, 21.7% Sometimes, 13.0% Neutral, 21.7% Often, 43.5% Always
- 4th year of study and beyond: 27.3% Never, 27.3% Sometimes, 13.0% Neutral, 21.7% Often, 22.7% Always

Graph 22: Survey D Question 11

Do you, as a singer, use any of the following methods for body/postural alignment yourself? Please check all that apply.

- Yoga: 56.5%
- Alexander Technique: 65.2%
- Feldenkrais Method: 21.7%
- Pilates: 43%
- I do not use any method: 21.7%
Graph 23: Survey D Question 12

Do you, as a teacher, use any of these body/postural alignment methods with your students, if yes, then which one(s)

<table>
<thead>
<tr>
<th>Method</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yoga</td>
<td>57.1%</td>
</tr>
<tr>
<td>Alexander Technique</td>
<td>53.1%</td>
</tr>
<tr>
<td>Feldenkrais Method</td>
<td>14.3%</td>
</tr>
<tr>
<td>Pilates</td>
<td>28.6%</td>
</tr>
<tr>
<td>I do not use any method</td>
<td></td>
</tr>
</tbody>
</table>

Graph 24: Survey D Question 17

How frequently do you work on a student's body awareness in lessons?

<table>
<thead>
<tr>
<th>Year of Study</th>
<th>Never</th>
<th>Sometimes</th>
<th>Neutral</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>New student</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st year</td>
<td>8.7%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd year</td>
<td></td>
<td>13.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd year</td>
<td></td>
<td></td>
<td>27.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th year and beyond</td>
<td>13.6%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Legend:
- Never
- Sometimes
- Neutral
- Often
- Always
Graph 25: Survey D Question 19

Do you use any of the following as a body awareness methods yourself as a singer?
Please check all that apply.

- Yoga: 54.5%
- Alexander Technique: 27.3%
- Feldenkrais Method: 4.5%
- Pilates: 18.2%
- I do not use any method.

Graph 26: Survey D Question 20

Do you, as a teacher, use these any of these methods for body awareness with your students? If yes, then which one(s).

- Yoga: 52.4%
- Alexander Technique: 57.1%
- Feldenkrais Method: 19.0%
- Pilates: 23.8%
- I do not use any method.
Discussion

The open-ended questions in the survey provided valuable information and insight into subjects’ thoughts on body alignment and awareness as well as the many methods and combinations of methods teachers use themselves and with students. These responses are found at the end of Survey Summary A.

Question 3 asked the subjects to respond to why they thought it was important to address a student’s body alignment. Subjects often responded by correlating the role of the body’s alignment with proper breathing and proper vocal tract functioning. One subject said, “optimal spinal alignment allows the most efficient neuromusculoskeletal physiological functions.” Several subjects also discussed the importance of postural alignment to avoid unnecessary tension in the body. For example, one participant stated, “If students don’t use the mechanical advantage of their bony structure for support, they will unnecessarily use muscular work to stand or sit that may either interfere actively with the movements of singing or interfere indirectly by tying up muscles that should be free to move to sing.” Another comment that came up several times referred to the aesthetic aspect of posture and its role in stage presence and confidence. “It contributes to a commanding stage presence,” was one subject’s response. Two respondents felt that while, body alignment was important, it was not a subject they emphasized. One of these subjects said, “While it is necessary for the singer to maintain a healthy posture while singing so as to avoid awkward or unhealthy muscle memory…I would be hesitant to make a major issue of it…I fear that too much emphasis placed on physical and/or muscular placement can lead to tension or stiffness…”

Questions 16 asked subjects to discuss why it is important to address a student’s body awareness. Responses to this questions equated awareness with learning about themselves and
staying engaged with the body and performance. A student must be aware of their body to realize when there is unnecessary tension in the body before he or she can release it. In particular, one subject said awareness was important, “So they [students] are aware of tension issues or habits when not in lessons as I only see them one hour a week. The rest of that week is spent in their own practice so it is necessary [that] they are aware of how their body is presented or the tensions through it.” Another subject said, “The student is the only one who can truly know what is going on with his or her body. As a teacher, I can guide what I see outwardly, but the student must also be aware of the inward workings of his or her body…” Conversely one participant stated, “I would very rarely address the issue…I find that too much focus on the physical mechanism creates more problems often than it’s worth…I simply feel that it [body awareness] is more relevant to the pedagogue than to the singer in the early stages.”

Questions 12 and 19 allowed respondents to write in other methods they used with students for body alignment and/or awareness in addition to or instead of yoga, Alexander Technique, Feldenkrais, and Pilates. Many subjects listed variations and combinations of methods, especially with Alexander Technique. A common response was “I am not an Alexander teacher. Therefore my teaching is merely informed by what I know from years of lessons and observations.” Similarly, “My approach is loosely based on Alexander Technique.” Other methods included Pilates2Voice®, Body Mapping, Linklater, Wes Balk Tension and Release Method, and bio/visual feedback.

Question 14 asked subject, which of the methods they used to encourage proper body alignment with students and why they used a particular method. Many subjects’ responses described various ideas and exercises from many different methods depending upon the needs of the individual student. Several subjects said they used Body Mapping along with ideas from
Alexander Technique. Body Mapping is a concept that Bill and Barbara Conable developed in the 1970s. The concepts had been implicit in the writings of F.M. Alexander, and the Conables made them more explicit and wrote about them in simpler language. Subjects expressed that Alexander Technique was easier to incorporate into lessons, but they might encourage students to use Pilates and yoga outside of lesson time. One individual said he or she was not a fan of using Pilates with singers, but another subject suggested Pilates2Voices® as a variation because it is a non-teacher dependent method once learned and is specific for voice performance. Another subject felt that, although yoga breathing is not necessarily the kind of breathing needed for singing, it was useful to help singers be more in touch with their breath. This idea was also addressed by subjects in questions 22. This question asked subjects which of the methods they used to encourage body awareness. The question was separated from body alignment to see if there would be different or similar answers to questions 14. Many respondents said they used the same methods for body awareness as body alignment, and one subject even asked if the survey had accidently repeated the page from questions 14. One subject said “see previous answer about alignment: I find these two lines of questioning as identical in my teaching.” Another participant answered, “I don’t focus on body awareness as much as posture/alignment. Although now that I’m taking this survey I see that as a disconnect.” Alexander Technique, Feldenkrais Method, yoga, and Pilates have the connection of the mind and the body as an essential part of their principles. The subjects’ responses were telling about how they viewed these methods. In particular subjects’ answers revealed whether they felt different methods were more useful for body alignment compared to body awareness, or if they did not feel there was a difference. Future surveys could use even more specific questions about teachers’ views of the difference or connection of the mind and body while teaching singers.
In general, most teachers are aware of body awareness and alignment methods, such as Alexander Technique, Feldenkrais Method, yoga, and Pilates. Teachers overwhelmingly use Alexander Technique and yoga themselves and with students compared to Feldenkrais and Pilates. Even though these teachers are aware of Alexander Technique and often have some experience with the method through lessons or workshops, none listed themselves as being certified. These subjects often said they used methods or exercises loosely based on Alexander Technique. There are not many locations for teachers to study and become certified in Alexander Technique, limiting the teacher’s ability to feel fully confident using the method with students. Yoga is more accessible. Several teachers mentioned leading yoga classes with their students or encouraging them to take yoga outside of lessons. Although subjects were aware of Feldenkrais Method and Pilates, these were the least chosen methods. The popularity of Pilates in the fitness industry and physical therapy profession has not yet reached the same level of awareness in professional voice instructors, at least in this survey. Although Feldenkrais has been helpful to many musicians, it may not have the level of widespread use that Alexander Technique has found. Overall, teachers do feel that it is necessary to address body alignment and body awareness for singers. They use a variety of methods to help both themselves and students with body alignment and awareness.
CONCLUSION

This document discussed the importance of body awareness and body alignment in singers. The science supporting the importance of alignment and awareness for both singers and the general public shows the necessity for research on methods to improve the body and the mind’s functioning. This document reviewed and compared four methods for increasing body alignment and awareness in singers. Yoga, Alexander Technique, the Feldenkrais Method, and Pilates are all methods that are popular with many performing artists, and singers often use them to enhance mind-body efficiency. Singers are usually exposed to Alexander Technique in their training because of its emphasis on the neck and head relationship to the body. Additionally, both singers and actors often relate to this method’s concepts since it was Alexander's own vocal problems that led to the development of his method. Yoga is also becoming more popular with singers. Its focus on body alignment, flexibility, meditation, and breathing patterns compliments the singer’s training. Feldenkrais and Pilates have had success in the performing arts and with physical therapists like those with the Medical Program for Performing Artists at Northwestern. However, according to the survey’s results in this document, voice professionals use both methods less frequently with students. Pilates tends to be more associated with dancers, and Feldenkrais classes and workshops for singers seem to be less available than other methods.

There are numerous case studies and narratives that praise Alexander Technique, Yoga, the Feldenkrais Method, and Pilates for their training in body alignment and self-awareness. Despite these claims, it is difficult to draw absolute conclusions about the effectiveness of these methods on body alignment and awareness due to limited medical research, specifically
concerning individuals within the normal population. This normal population would include performing artists.\textsuperscript{309} The increasing awareness of medical issues specific to performing artists is evident by the development of professional publications, such as the \textit{Journal of Voice} and \textit{Medical Problems of Performing Artists}, and the clinics that serve this population.\textsuperscript{310} Medical scientists are beginning to recognize the special needs of performing artists and the use of non-traditional or somatic body training and awareness methods, but there are still few formal training programs for performing arts healthcare.\textsuperscript{311} This lack of specific training may be one of the reasons there is little research on or about body alignment and awareness methods for musicians, especially singers.

Even with this lack of research, the use of complementary alternative medicine (CAM) in the United States has risen steadily since 1950.\textsuperscript{312} Recent data from the National Health Interview Survey, found that almost 4 out of 10 adults had used CAM during 2007.\textsuperscript{313} The most selected medical condition treated with CAM was back pain followed by neck and joint pain.\textsuperscript{314} The use of yoga, in particular, as a CAM had risen. The Alexander Technique, the Feldenkrais Method, and Pilates were not included in the data from the previous 2002 survey, but they were shown as CAM options on this survey from 2007.\textsuperscript{315}

\textsuperscript{311} Ibid.
\textsuperscript{314} Ibid., 6.
\textsuperscript{315} Ibid., 10.
Some of the barriers to public and medical acceptance of CAM in the United States are the lack of knowledge available to the public and those in the medical field on CAM, the lack of scientific research on these methods, the view of CAM as being inferior to conventional science, the lack of provider support, and demographic factors. A lack of provider support includes the lack of medical practitioner support and lack of coverage by health insurance providers.

Demographics from several surveys give insight into the use of CAM as well. Research and data continually show that women are more likely than men to use CAM. Individuals with private health insurance, and those with higher education levels were also more likely to use CAM. Regionally, people living in the West are more likely to use CAM.

Regulation of alternative medicine in Europe varies from country to country, but increasing costs in conventional healthcare have helped contribute to an increase in CAM. Up to 65% of the population has reported using CAM, and many mainstream practitioners have moved from a slight interest in CAM to a more open viewpoint and growing support. This growing interest might be one of the reasons many of the studies available on mind-body therapies originate in Europe. Since these scientists have become more open to increasing their knowledge of CAM, barriers and suspicion regarding CAM’s effectiveness are lessened. Therefore, medical doctors might be more likely to educate their patients and themselves about these methods.

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318 Ibid., 4.
Based on research into CAM use in the United States, there is reason to believe that the research on body alignment and awareness methods may continue to steadily increase. Many professional music organizations include lectures and workshops on mind-body methods. Currently, the National Association of Teachers of Singing’s 2012 Winter Convention will focus entirely on the unity of voice and movement. As the professional industry continues to place importance on acting for singers, the interest in movement efficiency for singers may increase the use of mind-body methods.

My survey asked professional voice instructors to answer questions about their use of body alignment and awareness methods with their students and whether they use it themselves. The results confirmed that teachers are well aware of various methods and often use them with students and themselves. They especially felt that students needed continual work on body awareness even though they saw the need to address body alignment lessen as a student progressed in his or her vocal training. Alexander Technique and yoga were the most popular methods chosen by teachers for their students as well as their own training. However, many felt that they used variations of these methods because they had only participated in workshops and often had not taken classes long-term. This information points to a lack of availability of training for voice instructors. Although not every voice teacher wants to be a certified Alexander or Feldenkrais teacher, more access to classes or availability to work with teachers with these specialties who also have performing arts backgrounds would be beneficial. Yoga and Pilates teachers and classes are more widely available, but few teachers approach these methods from a musician or singer's point of view. Discovering the number of teachers who have training in

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specialized body awareness and body alignments methods as well as a vocal training background could be an area for further research.
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