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Control versus Strength in Singing

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IT IS AN ALL TOO FAMILIAR SCENARIO in our profession—a young singer, desperate to establish a sense of control with some aspect of his/her voice, simply ramps up the effort level or volume level to compensate. Sometimes the singer triggers the desired effect and gets a good result; other times, it doesn't turn out so well. Often, when a singer resorts to sheer force, it betrays a need for increased skill or control in that aspect of his or her singing. And it raises the question: What is the difference between building strength and building control in the voice?

BUILDING STRENGTH

Though we sometimes avoid the topic of strength in singing, fearing that it may lead to pressed or tense sounds, we certainly build strength into various muscle groups as we train the voice. The greater the strength of any muscle group, the greater its stamina and endurance—so the benefits of strength in the mechanisms of the voice are apparent. But to differentiate this process from that of increasing control, we should understand exactly what happens as we build muscle in the body.

Each muscle is composed of numerous muscle fibers, each having the capacity to contract (shorten) and relax (lengthen). These fibers are bundled into groups, and held together by sacs of connective tissue that extend to (and become) the tendon that attaches it to bone or cartilage. Whenever a muscle is pushed beyond its capacity, micro-tears are formed in the muscle fibers. While we might not like the concept of something being “torn,” especially when it comes to the voice, these micro-tears are a natural, normal part of how muscle tissue develops. Provided we give the muscles a recovery period, they go about the business of not only repairing the tear, but also making the fiber stronger than before, creating additional muscle fibers. In this way, the body senses a need to be stronger, and then enhances and strengthens the fibers that are being directly challenged. When a muscle grows, it increases mass, appearing larger than before. A stronger muscle can handle the task more effectively, with less effort, so it inherently increases stamina and endurance with that task.

Thus, the key to building strength and stamina is in pushing the muscle beyond its comfort zone, and then allowing it time to repair and enhance its basic strength. Of course, much care must be taken in any effort to build strength into the voice. One must know exactly what muscles need to be strengthened, and how to isolate their action without creating constriction or other vocal problems.

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BUILDING CONTROL

In contrast to strength building, control is enhanced through a very different process. When a person attempts a specific movement, the body will attempt to comply—sometimes effectively, sometimes not. When a person repeats that movement consistently, however, the body gets the message that the movement is important, and it begins to enhance that coordination. It does this by building new or additional neural pathways to muscles that control the action. This translates into development of very fine control over the action of muscle groups being used. So building neural connections, unlike the passive “recovery” process that builds muscle, is an “active” process. In rebuilding muscle tissue, the body automatically begins a one to two day repair cycle; but building neural connections depends upon active focus and repetition. Since the amount of time allotted for this by the singer may vary from day to day, it may require a longer time frame for control to improve.

To understand this process more clearly, we need to understand how the body establishes new neural pathways, or rather, how it learns. Complete “learning” is dependent upon converting immediate memory to short-term memory, and then short-term memory to long-term memory. Without this conversion process, you might notice that a student seems to learn a coordination one week, but it has faded by the following week. It turns out that a little “healthy stress” is actually important to this process.

This is a tightrope issue, since when a student becomes overly stressed, the whole process breaks down. Still, a little “healthy stress,” perhaps akin to that of being actively engaged in a video game, releases norepinephrine, which is crucial to the development of long-term memory. Researcher Henry Holcomb (Johns Hopkins University) has established that, once this learning environment is right and the student is focusing on the skill, it takes five to six hours for a new motor skill to move from temporary to long-term memory.

So, to develop increased skill and control, our task is to create the right environment for learning to deepen (i.e., healthy stress or engagement), to accurately elicit the skill being taught, and to repeat the pattern long enough for the coordination to move into long-term memory. We also can observe that strength is not the crucial factor here. Rather, repetition is the key. Sound familiar?

WHEN TO FOCUS ON CONTROL VERSUS STRENGTH

Generally speaking, strength is called for when one needs to sustain effort over a period of time. The focus would be on control, where we have a need for enhanced fine coordination, or where we need to coordinate several postures simultaneously. Perhaps a couple of examples will prove more instructive than theory at this point. So let’s begin with one of the most common scenarios: the young man who ramps up his volume at the same time that he tries to drive up the voice to a high note.

Several issues are at play in this example. First, the attempt to “drive” up the voice suggests that he is trying to bring the same quality, and probably the same sensation, from his low range, up to the top. Second, he believes that increasing air flow is somehow important, but is probably unclear about its nuances. And third, more than likely, he is doing everything possible to avoid letting the sound “pop” into falsetto on the high note.

Regardless of one’s personal views about *passaggio*, register events, etc., I think all can agree that, as a man approaches the notes just above middle C, he has to make some adjustments to prevent “popping” into falsetto. This is an ideal task to practice building greater control. Since the goal is to prevent accidentally popping into falsetto, whatever muscle groups are useful in moving from falsetto to head voice are the ones we want to activate and better control. So we can have the singer practice transitioning *from* falsetto *to* head voice, but do it on notes that are easily managed—perhaps middle C or the D above. Here, there is no feeling of urgency, and the singer can focus on the distinctly different sensations that accompany the two qualities of voice. To maintain interest, we can use any number of variations: sing on individual vowels, vowel sequences, word phrases from their repertoire, or gradual and abrupt transitions. As the neural pathways become stronger, the exercise becomes “too easy;” then we know it’s possible to move up to more challenging notes, repeating the process until it is efficient again. In this way, we increase fine control of the subtle muscular actions that distinguish falsetto from head voice, without using excess pressures that might trigger constriction. As this coordination is brought into the higher range, there will be much less fear of losing control, and much less tendency to press or constrict to compensate for a perceived instability.

Depending upon the teacher's technical focus, other specific skills may be addressed in the same manner— isolating the action and practicing it in a range or setting that doesn't tend to trigger other tensions. As the singer becomes skilled with each new coordination, these can be combined more effectively to achieve the specific qualities desired.

A second example concerns the young singer (male or female) who tends to allow the chest to collapse during performance. From a front view, we may not notice this easily, but a profile view often will show the lowered sternum significantly altering good posture, encouraging the neck to stick out (forward), and increasing neck and jaw tension.

Typically with this issue, once the teacher restores proper body alignment, the other problems will disappear. So to reinforce the better posture, the teacher might focus on strength training. This is useful in two distinct ways. If the singer is capable of more easily sustaining the expanded chest position, then there will be less tendency to be pulled out of alignment. And, given that singers often have some "residual tension" that they need to manage, putting that tension into the muscles that expand the chest is very safe, and actually useful.

I might begin by assisting the student in finding the expanded position—sternum prominent with a feeling of expansion throughout the rib cage (this may require gentle stretching of other, opposing muscle groups). Then, using a scale between one and ten, I would ask the student to describe the level of effort being used to sustain the open position. Randomly, I would have the student move from one level of effort to another, to focus more and more on the location of the effort (i.e., which muscles are doing the work), and to notice the effect of varied degrees of effort. If I chose to have the student build strength, I might ask the student to sustain effort at a nine or ten for several seconds, and then have the student rest. If that was well tolerated, we would

repeat the sequence (engage/rest) several times, until the student felt that the muscles had been given a bit of a workout. Then I would ask that the routine be repeated two or three times before the next weekly lesson. I would expect the result to be an enhanced posture, and a decreased tendency to collapse the chest. One might argue that this is also building control (i.e., neural connections), and I would not disagree with that assessment.

CONCLUSION

Designing training routines and vocalises for students is where our understanding of the voice and the body really comes into play. In order to diagnose the problem a singer is having, we must thoroughly understand the mechanisms of the voice. Well, that's a tall order—especially since we're more accustomed to approaching the voice as an art form, rather than a science. But as we take our rightful role as "practitioners" in voice, we will continue to refine and enhance the methods of our industry and continue to blend useful concepts from science with our own rich heritage of tradition.

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Mark W. Lee, received degrees from Central Missouri State University (BME) and New England Conservatory (MM), with additional studies at the Conservatoire de Nice, France, Oberlin Conservatory, and with Estill practitioners. His professional preparation includes voice study with Mark Pearson, Remy Corazza, Claudette Corazza, and Conan Jennings Castle; master classes with Yolanda Marculescu, Darleen Kliewer, Berton Coffin; stage direction by Bodo Igesz and John Moriarty; coachings with Angela Vanstony and Margo Garrett. Mark holds faculty positions at the New England Conservatory of Music (Preparatory School and School of Continuing Education); Salem State College; Chair, Powers Community Music School Voice Department. He is Past Director of the Indian Hill Music School, and an active member of the NATS-Boston Board of Directors.

Those who fail to understand the meaning of the poem fail, as well, to understand the meaning of the music that sets it. Indeed, performers who have not thoroughly studied the poetry cannot sing or play the Lied with the focus, the imagination, and vitality that is essential for both the musicians and their audience.

Deborah Stein and Robert Spillman, *Poetry into Song*, 20.