

Deutsche Pädagogik für Moderne Sänger: On the Merit of Armin's *Stauprinzip*

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1 *Einführung*

“*Ausgewogenheit ist etwas nicht, dass Sie finden, es ist etwas, dass Sie erschaffen.*” In English, “Balance is not something you find, it’s something you create [5].” Though Kingsford is not a singer, there is an important takeaway that can be used for the voice: in order to find balance, we must work for it. While *Stauprinzip* is a breathing method that can cause damage if one is not careful, it, also, has the potential to be extremely beneficial to inexperienced singers as a means of broadening their understanding vocal pedagogy outside of the traditional, Italian *bel canto* style as well as learning how to find balance in their voice.

2 *Stauprinzip*

In his 1909 treatise, *Das Stauprinzip: Oder Die Lehre Von Dem Dualismus Der Menschlichen Stimme*, “The Damming Principle: Or the Lesson of the Duality of the Human Voice” [1], George Armin wrote on the concept of turning *Dualismus*, duality, into *Einheit*, unity. Of the four chapters, one is on *den Dualismus der Tonproduktion*, the duality of tone production, and another on *den Dualismus der Vokalformen*, the duality of vowel forms. An *echte Ton*, real tone, could, in his opinion, only be created through the *Einheit* of both *Tonproduktion* and *Vokalformen*.

Armin taught two *Gesangsregister*, vocal registers: *das Brustregister*, the chest register or chest voice, and *das Falsettregister*, the *false alto* or head voice¹ ([1], [19]). He wanted an *Ausgleich*, balance, between the two that made the contrast between them less dramatic while still keeping the two somewhat distinct. There is another German term similar to this, *Verschmelzung*, fusion, that created a *Mittelstimme*, middle voice. However, that principle completely removed all of the registers’ defining attributes. He believed the best way to achieve *Einheit* and *Stauprinzip*, in general, was through the *Brustregister*. Although the singer may not be able to sing many notes at first, through their studies, which he attributed to the strengthening of the *Brustregister*.

He also taught that there were two *Vokalformen*: *flache*, shallow, and *höhle*, hollow ([1], [19]). *Flache* vowels sit in the front of one’s mouth, while *höhle* vowels sit in the back. Armin preferred a combination of the two called, *Rundung*, rounding, because that would properly develop the voice. By mixing, for instance, [e], a *flache* vowel, with [o], a *höhle* vowel, and [i], a *flache* vowel, with [u], a *höhle* vowel, he could create [œ] and [y], vowels that allowed for a perfect balance of the vowel types. Once a singer has mastered this, they can begin to create other vowels from these foundations through the coordination of vowel harmonies, and over time, they will have a tone that is balanced on every vowel.

Stauprinzip is translated to the “damming principle” in English because it requires the singer to build up an extremely large amount of subglottal pressure without releasing it, similar to putting a dam in a river. Armin believed that, while support would start with the upper body, it would extend to the lower back and diaphragm through their continued studies [19]. He required a very muscular and strong position for the lower body and thought that this would remove tension in the larynx. Muscular antagonism was a major part of his treatise [7]. Some did not have their glottis firmly shut, however [14]. This is not ideal because, as aforementioned, *Stauprinzip* centers around having very high subglottal pressures, something that can only happen with a fully-closed glottis. It has been called the “congesting”² principle before because the amount of muscular antagonism

¹It should be noted that today most consider the *false alto* and head voice to be completely different registers as they are physiologically different. These differences are noted in the *Glossar* on page 8.

²Miller 2002, *National Schools of Singing: English, French, German, and Italian Techniques of Singing Revisited*, 29.

can cause congestion. However, this label is not approved by other pedagogues. Armin’s teachings, also, focused heavily on syllabic exercises; mobility of the voice was not a primary concern of his [19].

Nothing is born in a vacuum, however. George Armin was inspired by Friedrich Schmitt’s breathing techniques and Bruno Müller-Brunow’s ideas on vowels [19]. Believing that Germans lacked the resources and teachers to study voice in their home country, Schmitt published *Große Gesangsschule für Deutschland*, “Large School of Singing for Germany,” in 1854. He was one of the first pioneers of the German style of singing, Wagner thought it to be the basis of performing German operas. He advocated for a firm and muscular upper body so the lungs could expand to their fullest potential. The ribcage should remain inflexible and expanded throughout expiration and phonation “as if the air [was] held in.”³ Singers should, at first, practice releasing a small amount of air and once they have mastered that, release larger amounts, showing an increased control of their breath. Müller-Brunow’s *Tonbildung oder Gesangsunterricht?*, “Sound Production or Singing Lessons?,” came in 1890 from his belief that other methods placed too large an emphasis on scientific understanding and Italian pedagogy. He felt that the speaking voice was important in fixing the singing voice and used syllabic exercises as a means of coordination. He used [ø], a mixed vowel, for the foundation of what he based a lot of his work off of, the idea of *Primärton*. The vowel, [ø], is a mix of a *flache* and *höhle* vowel, and that balance is what makes it ideal for teaching resonance.

Both Bruno Müller-Brunow and George Armin might have been influenced by Richard and Cosima Wagner’s ideas on consonants. German pedagogues held clear speech and passion behind one’s words well over melodic beauty, and Cosima Wagner championed the idea of *Sprechgesang* [9]. In the Wagners’ Bayreuth Festival, some singers developed the habit of spitting out their consonants as a way of pleasing her before she could admonish them for unclear diction. Müller-Brunow believed that clear, strong consonants were necessary for developing resonance, while Armin believed that text and voice building were one in the same and good diction led to even better declamation.

3 *Andere Pädagogische Ideen*

To best understand the advantages and disadvantages of *Stauprinzip*, one has to know what pedagogy surrounds and opposes it.

3.1 *Bel Canto*

In the western world, there are four main nations where vocal pedagogy comes from that are considered by most. These are the English, French, German, and Italian Schools of Singing; each with its own distinct customs and ideas about how to sing with the utmost beauty and health. For many, especially those who are studying or have studied with a specialized teacher before, the Italian School is the foundation of their training because it is often described as the healthiest way to a beautiful and long-lasting voice. Italian is typically one of the first foreign languages singers learn and even if a song is not in Italian, the music is riddled with Italian words, like *allegro*, *dolce*, and *fortissimo*. Italian is, in many ways, a focal point in Western classical music. Main aspects of the School of Singing include a low laryngeal position, luxurious melodic lines, and a solid but flexible system of breath management. All of which culminates in the idea of *bel canto*. Translating to “beautiful singing,” it is the standard way of teaching what many know today as the ‘classical

³Whitener 2016, *The German School of Singing: A Compendium of German Treatises 1848-1965*, 38.

voice' and is what all other pedagogical principles are compared against, regardless of their country of origin. The term is used to describe a style of singing made popular between the mid-1700s and 1900s and is an agglomeration of many different treatises on the topic of singing by many different pedagogues ([8], [16]).

Before 1837, many in France sang with a particularly high larynx [2], which required male voices, in particular, to sing in *falsetto*. That year, however, Gilbert Duprez, a tenor who studied in Italy, introduced the idea of a low larynx to Paris. This was revolutionary because he was able to reach the same notes as those singing in *falsetto*, but the tone quality was much more powerful and had a similar resonance to the notes lower in his range. Lowering the larynx, rather than raising it or keeping it neutral, gives room for the vocal tract to lengthen, allowing for a more open throat. The voice is similar to a guitar in that the sound must resonate in the instrument before coming out. Though it may not seem like it because both are comparatively small and can only move a few centimeters at most, having a low larynx, in addition to a raised soft palate, can drastically change one's sound from being very narrow and pointed to being incredibly open and sonorous.

The Italian School prides itself on creating beautiful melodies, and there is a substantial amount of literature on how to accomplish it. Many method books gave a step-by-step guide on how to become a great singer. Oftentimes, they started with something considered to be less complex, like *sostenuto*, and ended, as much as one can end a continuous learning process, with something considerably more difficult, like *coloratura*. Though finding an experienced teacher should be the first step in one's journey to becoming a singer, these books made, and still make as they are still available, learning the basics of singing much more accessible. Furthermore, Italian pedagogues recommended against too strong of consonants because it would disrupt the melodic line, which strongly opposes the German School's ideology [19].

Their breath management system will be discussed in the next section.

3.2 *Appoggio*

There are three main breath management systems in singing: thoracic, diaphragmatic, and Clavicular ([4], [6]). Thoracic breathing uses external intercostals to lift the thorax (or ribcage) and internal intercostals to keep it steady. The abdominal wall remains still, hindering the downward movement of the diaphragm. Diaphragmatic breath management, also known as abdominal, focuses on the lowering of the diaphragm to drive the volume change related to lung expansion. In this method, the thorax is often kept still and elevated and does not contribute to respiration. There is a debate as to which is the best form, but both are commonly practiced and have been determined to be beneficial to singing as they allow for a significant amount of lung expansion, and the breath taken in can be easily controlled, with practice, of course. The clavicular breath management is widely discouraged in most, if not all, *bel canto* spaces. This is because it allows for the least amount of air and causes the most amount of tension in the neck. Clavicular breathing raises the clavicle, shoulders, and upper chest.

Good breath support is the foundation of singing, and without it, there will always be something missing in one's performance. *Appoggio* is the chosen breath management system of *bel canto* singing and is often described as a mix of thoracic and diaphragmatic [6]. In English, the Italian word *appoggiare*, from which *appoggio* is derived, means to support or, more popularly used by voice teachers, to lean ([4], [10], [14]). Francesco Lamperti is credited greatly for his contributions to the idea of *appoggio*. In his treatise, **The Art of Singing**, he described *appoggiata*, another term for *appoggio*, as a single, controlled rush of air in which one takes in exactly as much air as they need and can produce all of the notes in their range [2].

This is done by intentionally resisting the relaxation (or rise) of the diaphragm, an inspiratory

muscle. The diaphragm is often incorrectly labeled as a muscle one can build support from, but in actuality, it can only go down when one takes a breath [6]. One cannot even feel the actual muscle, only the effects of it (the stomach bulges because of the organs in that region being displaced by the diaphragm, which, in turn, causes a deep breath). One can learn to keep it contracted through muscular antagonism and many, many years of practice. This idea is, also, known as the *lutte vocale*, a term coined by Louis Mandl ([2], [14]). However, it was found that this is something most people, especially outside of elite singers, cannot do for long periods [6].

It also requires a full closure of the glottis [14]. This was the time of Wagner and Meyerbeer, among others, and possibly because of the growing orchestras and demands of singers, a large emphasis was placed on this aspect. High levels of subglottal pressure were incredibly important in Lamperti's work and were taught to all of his students. His son, Giovanni Lamperti, believed in high subglottal pressure. He believed that the more pressure one had, the greater their inhalation would be and the glottis' purpose was to let go of any compressed breath. An open glottis - and in turn, a loose breath - could prove to be at best, a hindrance to one's ability to sing and progress in their studies, and at worst, dangerous to one's voice.

3.3 *Minimalluft*

Upheld by Cosima and Richard Wagner, the German School of Singing is pedagogy explaining the 'German' way of singing [9]. Though Cosima spearheaded the idea, both agreed that the Italians' concept of *bel canto* had no place in German vocal music. It encompasses using a very muscular approach to singing, *Sprechgesang*, an exaggeratedly low thoracic position for taking a proper and deep breath, and an exaggeratedly low larynx [7].

In direct opposition to the German School of Singing, and specifically *Stauprinzip*, was the concept of *Minimalluft*, created by Paul Bruns. According to him, *Stütze*, another term used for *Stauprinzip*, did not allow for enough freedom within the voice to allow for necessary skills, like doing a proper *messa di voce*, for instance [19]. He felt that too much emphasis was placed on breath support and filling the lungs with air. Most of his work was heavily influenced by the Italian School of Singing and the *bel canto* style, and he believed *Minimalluft* was the best representation of *appoggio* in comparison to all other principles in the German School. Although Armin and Bruns disagreed on most pedagogical matters, there is overlap in their idea of keeping a low laryngeal position, an important aspect of both the German and Italian Schools. Bruns also taught a raised soft palate and having the tip of one's flat tongue on the back of their teeth. Though both of which are, in fact, very reminiscent of Italian pedagogy, other German pedagogues, such as Bruno Müller-Brunow, taught a flat tongue, as well.

Additionally, he was a big proponent of the idea that singing should feel somewhat natural to the body and there should be a certain ease about it, thus the term *Minimalluft* or "minimum air" [19]. He advocated for using the least amount of air possible while maintaining flexibility in the abdominal wall. Much of his work was centered around the idea of *Freilauf*, free air. Bruns also had an interest in overtones [19]. He believed that a lack of tension was the only way one could develop their partial tones because the tension would hinder the normal descent of the diaphragm. As he taught diaphragmatic breathing, this descent was very important.

Interestingly, he also wrote that the volume of the orchestra was detrimental to the voice, and elaborate stagings and orchestral arrangements led to poor acoustics as well as took attention away from the singer. In 1934, roughly five years after Bruns' treatise was revealed to the world and the year of Bruns' death, a study was published in the Journal of the Acoustical Society of America about something involving the third, fourth, and fifth formants that would grow to be known as the Singer's Formant ([6], [15]). It is a bit of a phenomenon that allows singers to be heard above

an orchestra without external amplification [6]. This is an excellent example of pedagogy, of all kinds but especially that which relates to the body, constantly changing. While there are a lot of differing opinions in much of vocal pedagogy, in particular, between its pedagogues and their treatises, sometimes there are small, undeniable things that everyone is forced to acknowledge, regardless of how they choose to acknowledge it. The overlap of music and research is not nearly as novel as one may think and has led to some incredible discoveries.

4 *Moderne Verwendungen*

Most aspects of life can be considered to be very similar to a pendulum. Take, for example, the concept of work. One learns what over- and under-exerting themselves feels like, then attempts to find a somewhat happy medium, so they can become or remain comfortable. Singing works similarly. Because the voice is not an instrument one can feel with their hands, one has to learn, typically with the help of a trusted teacher, how to hear and feel with their entire body what sounds and is ideal. Oftentimes, one begins to find balance in their voice by learning what the extremes are and what *imbalance* is.

Of course, as with anything, moderation is key. There is some controversy surrounding this principle because taken to the extreme, *Stauprinzip* can cause damage due to it requiring a significant amount of tension in the lower body and a lot of heaviness in the voice. This principle, especially concerning the posture Armin requires, is sometimes described as “aggressive”⁴ or “military-like”⁵. He wanted to invoke the same muscles used in a grunt with a *Stönlaut*, or “groaning utterance”⁶. This has the potential to, if done repeatedly over a some time, harm the vocal folds. Armin, also, promoted a tone quality that was incredibly rich in darkness and heaviness. Excess use of which can hinder mobility, especially at the top of one’s voice, where the sound should be lighter and not strenuous on the body ([9], [13]). This weight can make it harder for singers to reach the fullest potential of their range and easier to be flat.

However, there is merit to his teachings. *Stauprinzip* can be used to teach a darker tone and lower larynx to singers who struggle with these concepts. The latter is very important in *appoggio*, which *Stauprinzip* has been compared to before. It can even be described as a more muscled version of *appoggio*. Young singers, especially those in choral programs, are often discouraged from singing with too dark of a sound because it is not ‘age-appropriate,’ makes for a less unified sound, or or any other reason. There are a plethora of them. Because of this, young singers may feel as though they need permission to use all or some of that richer tone quality. *Stauprinzip* can allow them to do that. By putting some attention on darkening their tone quality, young singers are strengthening their voice and learning how to become more well-rounded singers.

Furthermore, when inexperienced singers do go up in their range, a normal tendency is to raise the larynx, which leads to a sound that is usually very shallow and/or shrill. Armin’s suggestion of a dark tone would be beneficial because it requires a low larynx and an open throat. Some do see it as being a “forced”⁷ low laryngeal position. However, because this is not a position the larynx is typically in during ‘normal’ life, how else will inexperienced singers learn what it feels like? Many things about the voice are not automatically learned for most people and many things require the

⁴Parr 2019, *Wagnerian Singing and the Limits of Vocal Pedagogy*, 67 and 73.

⁵Parr 2019, *Wagnerian Singing and the Limits of Vocal Pedagogy*, 68. Whitener 2016, *The German School of Singing: A Compendium of German Treatises 1848-1965*, 85.

⁶Miller 2002, *National Schools of Singing: English, French, German, and Italian Techniques of Singing Revisited*, 28.

⁷Whitener 2016, *The German School of Singing: A Compendium of German Treatises 1848-1965*, 155.

singer to be pushed slightly out of their comfort zone to create the best and healthiest sound in the long run.

Lastly, the music of Mozart, Handel, and other Italian composers of the time are used to encourage inexperienced singers to sing with a sound that is both free and mobile. These *arias*, *ariettas*, and art songs are great for introducing new singers to *bel canto* music, and teaching and reinforcing concepts. However, using music that further requires a singer to experience new forms of singing will allow them to become more versatile singers in the long run. While Wagner is not fit for every voice type, every singer can benefit from learning the power and richness of what some consider to be the pinnacle of German vocal music. *Chiaroscuro* is an Italian term used to exemplify mixing brightness with darkness, similar to the idea of yin and yang. Including principles from the German School of Singing, as well as other Schools, can allow singers to not only get a broader perspective on vocal pedagogy but also know what works best for their voice and *why* it works best. Being able to explain why it works will help them to recreate it in their lessons, practice sessions, and performances, and even, if they so choose, teach it to others.

If *appoggio* is the middle, and most inexperienced singers tend to lean towards the ‘left’, then *Stauprinzip* can be considered a viable solution for getting them closer to reaching that perfect balance. Despite criticisms saying that it is harmful to voice, there is a case that suggests otherwise. James Stark (tenor, vocal pedagogue, and source for this paper) was trained using *Stauprinzip* then switched to a system closer to *appoggio* later in his career. In a study done comparing his subglottal pressures between 1974 and 1996 [13], it was found that Miller sustained no injuries to vocal folds, despite having extremely high levels of subglottal pressures throughout the beginning of his studies. The researchers concluded that “singing methods advocating high subglottal pressures (eg *Stauprinzip*) are not necessarily physiologically detrimental”⁸. While this is, of course, a single case and does not mean that everyone should implore to use *Stauprinzip* in excess, it does show that it is possible to use it at the beginning of one’s career and move on to breathing techniques that work better for them.

5 *Schlussbemerkung*

Looking at historical pedagogy is important because although technology has changed, the instrument has not. By looking back to go forward, we are broadening our knowledge and creating better and more capable generations of singers and pedagogues. We, as a community, might not know much about the voice, but reading literature from the past, it is easy to see how much has stayed the same, how much has changed, and how far we have come. Recent constants, for instance, have been maintaining a low larynx and strong breath management system, both of which *Stauprinzip* teaches. Though it is not perfect by any means, it can be used to further, or even start, a singer’s progress in their voice lessons and professional life. Singing is about balance, and without being able to hear and, more importantly, feel both sides, how can we find that?

⁸Schutte, Stark, and Miller, *Change in Singing Voice Production, Objectively Measured*, 501.

Glossary

allegro Fast. Refers to the tempo one should play or sing. Italian. 3

aria Melody sung by a single voice and accompanied by an orchestra. Typically in an opera. Italian. 7

arietta Short aria. Italian. 7

art song Melody sung by a single voice and accompanied by a piano or other singular instrument. Typically stands alone or in a short body of work. English. 7

chest voice Lowest register sound can resonate in. Vibrations are typically felt in the chest. English. 2

chiaroscuro Contrast of lightness and darkness. Originally an art term that has been applied to music. Italian. 7

clavicular Breath management system that raises the clavicle, shoulders, and upper chest. Allows for the least amount of air of the three systems. English. 4

coloratura Music that is very elaborate and contains a lot of runs, trills, etc.. Italian. 4

diaphragmatic Breath management system that lowers of the diaphragm to allow for lung expansion. Also known as abdominal breathing. English. 4, 5

dolce Sweetly. Refers to how one should play or sing. Italian. 3

falsetto Lightest vocal register. Used mostly by tenors. Different from head voice in that the sound is breathier because glottis is not closed and the vocal folds are longer, stiffer, and thinner ([3], [17]). Italian. 2, 4

flache Shallow or forward. Vowels felt at the front of one's mouth; [i], [e], [a], and [ä] [1]. German. 2, 3

formant Resonances that amplify and enhance sounds in the vocal tract. English. 5

fortissimo Very loud. Refers to what volume one should play or sing. Italian. 3

head voice Higher register sound can resonate in. Vibrations are typically felt in the cheekbones or lips. Different from *falsetto* in that it requires full glottal closure ([3], [17]). English. 2

höhle Hollow or back. Vowels felt at the back of one's mouth; [u], [ü], [ö], [ō] [1]. German. 2, 3

inspiratory muscle Contraction happens during inhalation. English. 4

lutte vocale Vocal struggle. Relates to the abdominal muscles and diaphragm. Italian. 5

messa di voce Gradual crescendo (increase in volume) and decrescendo (decrease in volume) on a sustained pitch [2]. Italian. 5

muscular antagonism Balance of contraction and relaxation between muscle pairs. As one muscle contracts, the other relaxes and vice versa [11]. English. 2, 5

overtone Frequency in a complex tone that exists higher than the fundamental frequency (Frequency of Oscillation) [6]. English. 5

Primärton Primary tone. Bruno Müller-Brunow's idea that this the most natural and resonant sound a singer can make. Used [ø] as the foundational vowel [19]. German. 3

resonance Reinforcement of sounds at specific frequencies in a cavity [18]. English. 3, 4

Rundung Rounding. George Armin's idea of mixed vowels. German. 2

Singer's Formant Clustering of the third, fourth, and fifth formants into a single formant that allows a singer to be heard over an orchestra [6]. English. 5

sostenuto Sustained tone. Hold a single note for a designated amount of beats, take a breath, raise the pitch, typically by a half step, and repeat. Italian. 4

Sprechgesang Speak singing. Emphasis on declamation, enunciation, and clear speech. Important in the German School of Singing. German. 3, 5

Stütze Support. Sometimes used in describing *Stauprinzip*. German. 5

subglottal pressure Pressure under the vocal folds that comes from the lungs [12]. English. 2, 5, 7

thoracic Breath management system that uses external intercostals to lift the ribcage and internal intercostals to keep it steady. English. 4

to be flat To be under the pitch. English. 6

Verschmelzung Fusion. Complete mixing of the chest and head voice in a way that makes them lose their individuality [19]. German. 2

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