

BMPF 7003: Working and Learning: An Introduction to Work-Based Higher Education This is a two-part assignment

Part 1

Critically evaluate a range of theories and models that you have recently studied, explaining their relevance to your workplace practice and procedures and develop a strategy applying what you have learned to improve your practice.

This part of the assignment is 2700 words and is 60%

Different types of distorted vocals: How to recognise them and what is their anatomical function.

My goal in doing this research was to further expand my knowledge on extreme vocal effects, update my techniques with new tools and explore the latest information concerning combined vocal effects, vocal fry and fry scream on a later stage. I wanted to assess the impact of all the new research to me not only as a performer of distorted vocals but also as a teacher of extreme vocal techniques. I picked this topic because I wanted to provide my students with enough information on these extreme effects and new research in terms of anatomy and vocal technique so that they will be able to distinguish the differences between these various effects. Due to the fact that these techniques are relatively new, there is not a great deal of literature on them. On the contrary, there are hundreds of tutorials on you tube and different terms often used to describe the same thing, that many people get very confused. As mentioned above, I am a private teacher for distorted vocals and extreme metal techniques and I would like to help my students understand all the different types of vocal distortions and give them new teaching tools to approach these effects with minimum pressure at their vocal folds.

Some of the most popular terms than one can find when surfing around the internet trying to find information on extreme singing are : Death metal vocals, Growling, Grunting,

Shouting and Yelling, Screaming, Extreme heavy metal singing, False Cord technique, Vocal Fry, Fry Screaming, Creak, Creaking, Falsetto growling, Low and high pitched false cord scream, Inhale fry screaming and the list goes on. All these terms are very handy and prove to be useful in terms of teaching as long as the teacher sets a clear solid base from the beginning of how these terms are going to be used in practise.

Many people believe that they are not capable of producing aggressive sounds or that they need to learn an ancient secret to be able to unlock this specific area of their larynx in order to scream, shout or growl without this resulting in a trauma on their vocal folds. But this is proven to be wrong by many artists that go on tour for many months every year without ever having vocal damage. Case in point would be Tatiana Shmailyuk from death metal band “Jinjer”, who has been on tour for 8 months a year with everyday shows and no vocal damage, Vicky Psarakis from death metal band “The Agonist”, Alissa White-Gluz from melodic death metal band “Arch Enemy” and the list goes on.

Due to the evolution of research on the human larynx, we acknowledge that we all have a pair of true vocal folds (TVF) and a pair of false vocal folds (FVF) together with all the other parts of our larynx. “The true vocal folds are two horizontal muscular flaps that lie behind the thyroid cartilage”. “Above the true vocal folds lie the false vocal folds. They contain very few muscle fibres and are rarely involved in singing”. “Although not generally used in singing, there are certain extreme forms of vocalisation, such as growling where the false vocal folds are pressed against the true folds to create a low frequency vibration” (Harrison and Watson, 2020, p13, p69, p87). This indicates that we all have at least anatomically, what is needed in order to create “weird” sounds. All these sounds usually go together with emotions.

“The voice is the muscle of the soul” (Pikes, 2004, p53-55) is a phrase I often use at my lessons to express the importance of adding emotions to our singing whether it is melodic or just pure noise. The 6 primary emotions related to the voice are happiness, sadness, fear, disgust, anger and surprise (Ekman & Friesen 1975). Depending on the style or the genre we express more of one or another. When it comes to extreme aggressive effects, most of the times we express fear, sadness and anger.

“Singers across genres such as Rock, Pop, and Heavy Metal often use vocal effects that sound rough, strained, or hoarse, without the singers necessarily being hoarse or suffering any laryngeal damage or voice fatigue. These effects are used for conveying additional sentiment, expressivity, and/or emotion during singing.”(Aaen et al, 2021)

According to Titze (1994), severe trauma might result in a choked, distorted voice. It can also be a pain response. This can be utilized in performances as an emotional toll to show entire devotion or hurt. My aim is to find a healthy way of reproducing these sounds without causing a phonotrauma.

Most of my students if not all of them, relate to these feelings and they can produce an aggressive sound right away. Others need more time. Either way, I can state with certainty based on my experience, that the primary source of these sounds is the emotions that we focus on.

Although using specific emotions is very helpful when related to experimentation and practise, we are talking about distorted effects and this means that they all have noise and quite often they can sound very similar. How can we recognise them and not confuse one another?

I developed the idea of creating 2 big categories of extreme vocal effects on the basis of the voice mechanics behind each one. The first category includes all effects that are being produced in the TVF area and the second one includes all effects produced in the FVF area. Needless to say that this is only to make some explanations easier in the beginning because in reality, various tissues, cartilages and almost everything situated at our larynx take part in these processes. “Grunt is produced by making the whole larynx vibrate in an open position. The arytenoids, the aryepiglottic folds, the epiglottis and the very base of the vocal tract are vibrating, creating frequencies at a rather powerful volume”(Sadolin, 2021, p298).

The first category comprises of vocal fry/pulse register and fry screaming.

FRY

Vocal Fry is commonly related to the lowest pitch range of the human voice. “The vocal fry register is the lowest vocal register and is produced through a loose glottal closure that permits air to bubble through slowly with a popping or rattling sound of a very low frequency” (McKinney, 1994, p98). In this case we deal with compressed VF that vibrate tightly but aperiodically against each other. There is no movement here from the FVF. The VF become compact and the bubbling of the air gives this characteristic “popcorning” sound. We can vocal fry sometimes unintentionally because we are being lazy, or hoarse or woke up very early in the morning and we have minimum body support. It is very easy to do as it requires no tension.

Fry scream on the other hand is something slightly different. This term was first introduced by Melissa Cross almost 15 years ago at her “Zen Of Screaming” dvds and was a breakthrough point for all metal vocalists worldwide as no vocal coach or voice teacher had done any research until then or as we speak! The difference in this case compared to vocal fry, is that many times when a fry scream is performed, there is a FVF involvement that can vary in percentages. Alternatively, fry scream is also called whisper scream. But as the extreme metal scene keeps on re inventing itself, we have new terms for “different” fry screams such as low fry scream, mixed fry scream, whistle fry, false fold fry and more. I will provide more information on this topic in the future.

Creak and Creaking are the terms Cathrine Sadolin uses (2021) to describe vocal fry. “Most likely, the very delicate creaking sound occurs from internal vibratory movements from different parts of the vocal cords. The vibrations of the VF in both Creak and Creaking have a complex but regular vibratory pattern” (Sadolin, 2021, p286). Sadolin suggests that Creak and Creaking can be combined with other effects such as distortion, rattle, grunt, scream, vocal break, audible air, vibrato and ornamentation. All vocal effects as demonstrated via CVI are included at the references list.

Moving on to the second category, I have included the effects that are more FVF based.

The most popular terms on this category and most commonly used are growling and distortion. Grunting is also often used mostly as a synonym for Growling although according to Sadolin they are not the same thing.

GROWL

Fortunately, I was luckier in my research on the definition and healthy production of growl due to the fact that I discovered more sources.

“The term growl typically refers to low pitched, rough sounds uttered by animals. Humans occasionally use growl-like voices to express excessive emotions. Acoustically characterized by loud dynamics and low values of the harmonic-to-noise ratio, growl-like sounds usually express anger and excitement associated with aggression” (Tsai et al, 2010). The animal kingdom is an excellent experimentation tool when it comes to describing the aggressiveness of the sounds. But what sparked my interest for this specific study is the demonstration of how abdominal muscular contractions improve spine stability, which is important in physical attacks. In the same study, the experiments performed on the activation of the deepest abdominal muscle (transversus abdominis) during rest, singing, and growling backed up this theory. The abdominal muscular activity connected with creating voice and the perceived aggressiveness intensity of voice were found to have a substantial positive association. This excites my pupils, and they keep in mind that in order to emulate a "heavy" sound like a growl, they must be aware of the importance of spine stability and posture.

Sadolin describes growl like “ An effect that can contain several different expressions from devotion to aggression. Growl takes place at the level of the arytenoid cartilages/ cuneiform, epiglottis and aryepiglottic folds” (Sadolin, 2021, p294). Low growl sounds are very typical in death and black metal music. Guzman concludes that “Growl voice seems to be produced by decreasing vocal folds adduction and increasing Psub, which in turn promotes an increased airflow rate” (Guzman et al, 2018).

In one of the few studies specifically for death metal singers conducted by Italian phoniatrist and death metal singer Enrico Di Lorenzo and his colleagues, it is stated that “Growling and Screaming showed that TVF edges touched only occasionally and glottis stayed open for most of the production time while the FVF were active. HPFSV and LPFSV (high and low pitch false vocal folds scratched voice) were produced with simultaneous steady and symmetric vibration of the TVF and FVF with the TVF adducted and the FVF partially adducted. The sound spectrographs of growling and screaming showed a spectrum dominated by noise” (Di Lorenzo et al, 2016). The reason why I find this information very useful is because it clarifies the involvement of the TVF during Growling and Screaming. Thus it provides me with a valid explanation on why doing easy scales up and down, on a non distorted voice, is an excellent choice for a proper warm up.

DISTORTION

Distortion is also mentioned as voice with distortion, raspy voice and voice with grit. This is due to the fact that distortion is a mixture of noise and tone although if we talk about full distortion then we have only noise and not so much tone underneath.

According to Complete Vocal Technique (2021), the ingredients for a successful distortion are the twang of the epiglottic funnel, a raised larynx, pulling the back of the tongue upwards and backwards, smiling with the mouth wide open and having a relaxed palate.

The sensation of the distortion is often compared with heavy lifting. Again, like growling and all other extreme effects, we use it to express a range of emotions in a healthy way.

The physiology of distortion as seen at Sakibara’s study (2004) is defined by the human larynx that acts as a sphincter in 3 levels and those are the true vocal folds, the ventricular folds and the aryepiglottic folds. In order to distort any of these levels, it is necessary to add a certain amount of constriction. When the amount of constriction gets bigger then the intensity of the sound gets bigger too. “The ventricular folds are incapable of becoming tense, since they contain very few muscle fibres. However, the ventricular folds can be

constricted by the action of certain intrinsic laryngeal muscles". (Sakakibara et al, 2004). This is a fascinating point as it marks the fact that the FVF are not the ones that are enormously tensed in order to have a more massive sound but other laryngeal muscles. In this manner, the belief that in order to engage with heavier sounds one needs to be extremely relaxed, becomes invalid.

In addition to these effects, rattle should be mentioned too. It is the most commonly used "by accident" vocal effect from my experience so far both as a teacher and performer. Anatomically, it is formed by the vibrations at the arytenoid cartilages and CVT divides it in 3 different qualities. The saliva rattle (arytenoid rattle plus extra saliva), the uvula rattle (vibrations at the uvula and the soft palate) and the back tongue rattle (vibrations at the back of the tongue), (Sadolin, 2021, p290).

The research I conducted for this project has given me valuable insight into the why and what of metal voice creation in terms of aggressiveness without the risk of VF trauma. It was an excellent opportunity for me to re organize the various effects utilized in metal and extreme music in general. However, it also made it plain to me that there is a lack of research on the subject. Furthermore, because more than one phrase is used to represent the same sound or function, the existing vocabulary can be highly frustrating.

Unlike other music genres and more traditional vocal techniques, where there is a wealth of reading material but no practical advice, there is very little information on extended techniques, particularly with fry scream. As a result, completely new teaching tactics must be developed in order to mix them with traditional ones.

My initial goals for this research were to examine the most up-to-date information on the nature of extreme voice effects in metal music and to be able to explain the differences in a simple manner. To have a better knowledge of the issues that arise when adding restriction to distort the sound, and to devise an approach to assist my students (and myself) in easily avoiding these constrictions.

I am aware of a few key findings that will have an impact on how I teach in the future and these are the following :

The language used to describe extreme vocal methods is quite confusing. The expressions "growling and grunting," "screaming and shouting," "voice with grit or rasp," and so on, in my opinion, are at least confusing for students because the same word can be used to describe two different things unless the teacher specifies otherwise. This something to take in consideration and be very careful when relating a specific sound to a specific technique.

As a result deriving from the above, I believe that each voice instructor for extreme effects, must be aware of the anatomy and the function of the larynx as a whole system (VF, FVF, Arytenoids, Epiglottis etc) when producing distorted sounds and be able to demonstrate these sounds in a healthy manner in real time. Alongside with muscle tension releasing exercises since I cannot stress enough the importance of a relaxed body when performing heavy and harsh sounds.

The most effective current student strategy would be a mixture of simple pitch glides, scales and SOVT and flow phonation exercises due to the fact that they are a great starting point for warming up the voice with minimum pressure, together with the engagement of animal sounds and noises we produce when irritated or angry or frustrated.

SOVT and flow phonation exercises are one of the most popular tools in warming up routines at all music styles including extreme vocal techniques because they result in an "effortless and efficient production" (Titze, 2015).

Assignment 2

A Reflective Review Comprising of Two Parts:

a) Reflect on your recent learning experience, and the value of learning you acquired. Assess your current competencies and identify future development needs in the context of the work situation.

b) Devise a detailed personal development plan which incorporates development objectives, activities to be undertaken, methods, resources review periods and timescales

From the beginning of this study, I was aware of the fact that there is very limited literature on this subject.

While I am a professional singer and voice instructor, with accredited university level background in the teaching and performing of pop and harsh vocals, using reflective theory was critical to my success in completing this project. Despite the fact that I have taken a number of courses and read relevant books on the subject "Teaching and Performing" and have also attended a variety of courses in various models regarding the approach of extreme vocal effects such as the CVT approach and the Melissa Cross Zen of Screaming seminars, I am still struggling to be creative with my explanations and challenge my students.

It was the first time for me to read in so much detail about different reflective methodologies. Ghaye interpreted very well the importance of reflective practise when he discussed about the unpredictability of our jobs and the edge of order and chaos : "Maybe reflective practices offer us a way of trying to make sense of the uncertainty in our workplaces and the courage to work competently and ethically at the edge of order and chaos..." (Ghaye, 2000, p.7).

I strongly believe that experience is a huge part of "conquering" extreme vocal effects, both mentally and physically. But additionally to that, I realised that it is necessary to reflect on my experience if I want to achieve the best results out of my teaching. As Dewey very well stated : "We do not learn from experience. We learn from reflecting on experience" (Dewey, 1933, p78)

After conducting my research into various approaches, I adopted Driscoll's model which tries to respond to three major questions : "What?", "So what?" and "Now what?" (Driscoll, 2007). This appeared to be the most straightforward method of assessing my learning experience and I tried to be very honest and broad-minded in order to have the best results out of this research.

It was of great deal to me to be very careful in my research for 3 main reasons :

1. I know from first-hand experience the value of being able to perform extreme vocal techniques without a tone of pressure on the vocal folds. I had to deal with 4 shows a week while I was a student at the Conservatory of Rotterdam for about 2 months with my then metal core band. I had to switch from growling to melodic singing and back for 50minutes straight while head banging at the same time. I would not be able to pull these shows through if I had not understood the amount of pressure that is needed for healthy growling and distortion. Since a great part of my work is teaching metal singers, experienced or not, I need to constantly evaluate my work and understand not only which exercise fits best each individual but also how to be clear about the sound production when it comes to beginners.

2. As a vocal coach and vocal teacher, my goal is to provide assistance to my students for vocal health, stability and breath control. The limited papers I found concerning metal vocalists specifically, all mentioned the importance of posture and the abdominal muscles in safe extreme sound production in order to avoid overstress of the vocal folds and maintain stability and efficiency. I believe that it is crucial when teaching extreme vocal effects, to point out the importance of these findings since it has been speculated for a long time now that one must be totally relaxed when producing harsh sounds and that is not the case.

3. As mentioned before, my biggest problem while conducting this study, was the limited number of papers and literature on this subject. Hence it was essential to be able to address the most important conclusions of each study.

“What?”

My primary task when I began this research was to look for sources that could validate my study on the ability to distinct the differences between extreme vocal effects. References not only on extreme effects in metal singing but on the anatomy of the larynx, the vocal folds and the false vocal folds. The most crucial task for me during this phase was to re evaluate the knowledge I had about the larynx and its function in relation to the production of heavy vocal noises. Despite the fact that I could see that I had a decent understanding of the process, I realised that, for the purpose of "educational convenience," I had a tendency to leave out key details such as the movement of the true vocal folds during a false fold scream. This is something I am going to be more careful in the future.

Aside from scholarly studies and other material, I looked for endoscopies of people screaming on YouTube and discovered a lot of them. This was really helpful since it allowed me to not only confirm many of the things I had been teaching, but also to comprehend the concepts I had been reading. I began looking at the pedagogical aspects of voice production in growling and shouting after I had a better understanding of the physiology. The results were a bit disappointing as the only official sources for teaching extreme effects remain CVT (2021) and Melissa Cross Zen Of Screaming dvds (2005,2007). There are many vocal teachers and instructors that present teaching routines but it is not very common to find someone with academic knowledge. Furthermore, because more than one phrase is used to represent the same sound or function, the existing vocabulary can be highly frustrating.

In order to overcome this difficulty, I started reading other material from top voice experts in an attempt to connect the dots such as Johan Sundberg and his research on Fry, Ingo Titze and his SOVT practise routine, Kenneth Bozeman on acoustics, Wolfgang Saus on overtones. I cannot pretend to fully comprehend all the scientific information I got, but I can see how it could have a significant impact on my teaching practice. Additionally, I tried to

find useful material from other disciplines such as Alexander technique, Feldenkrais and Yoga sing as they are all extremely useful when it comes to releasing tension.

“So what?”

After performing this research, I started evaluating my own teaching strengths and flaws. I had so many questions to ask myself deriving from my fear of not being good enough for my students. Despite being in this state of doubt, I realised that I was still providing accurate advice to my students on how to approach extreme effects with minimum muscle tension around the neck and throat area. Additionally, without realising it, I had come up with an approach on vocal fry leading to fry scream, suitable for most of my students, experienced or not. I came up with new ways to explain the fundamentals of these sounds and procedures.

I re evaluated the importance of yawning for example which is considered a more classical approach but in my case it was really helpful in relaxing the laryngeal muscles and let fry and growl gently kick in. The same happened with some SOVT exercises. Hummings and straw phonation have been shown to be effective in locating fry and then strengthening it, resulting in a fry scream.

Despite the growth of recent research in the subject of voice science, only a small portion of it is making its way into CCM pedagogy., according to this study's findings. This is a huge pity, because much of this scientific breakthrough is incredibly important for voice teachers. Extreme vocal effects are useful not only for metal vocalists but for all vocalists in the pop/rock/RnB and even for jazz. Growl was first located in the traditional jazz and gospel singers, so why should we exclude it from today's mainstream teaching?

“Now what?”

My aim in this study was to distinguish the different sounds and their source production in order to create simple plan of teaching the basic principles. I feel that I need to explore more on new sources and create a more solid teaching plan, expanding my set of specific exercises in finding safe growl, distortion and fry scream.

Personal Learning and Development Plan

Why am I doing this course?	I want to improve my teaching skills. I have taken a variety of voice pedagogy courses since I graduated from university in 2010. I would like to combine my knowledge and my experience into a solid teaching strategy and at the same time broaden my horizons on extreme vocal effects. My main goal as a teacher has always been to help my students improve their vocal stability and stamina in order to avoid unnecessary constrictions when screaming and shouting. As a performer, I aim for the same goal. Finally, I want to make sure I am up to date on the latest scientific findings and approaches concerning extreme vocal effects.
What is the direct benefit to me?	For me, the direct benefit is that I now have access to a massive library of new material. Even though I attempt to stay current and collect data from papers and articles that I find valuable, I could never have located all of these different sources and data. I enjoy that I can conduct my study on a somewhat new issue, such as distorted effects in metal singing, and receive help and criticism. Extreme tactics are welcomed with open arms, which encourages me to try new things. Due to the fact that I am already learning new things, I believe this will help me improve at what I do.

Developmental area	Action
1. Develop a general plan for teaching the basic characteristics of the different extreme vocal effects.	Create a document that summarizes all I have learned about voice physiology of extreme vocal effects and how it relates to my teaching strategy from this study.
2. Gain a better grasp of how body and breath alignment affects the production of harsh sounds.	Action Return to the library to read again all the new studies I have discovered during this research, and point out the most useful aspects of each study related to my topic.
3. Research on how to strengthen fry scream and achieve combined effects.	Action Find more information on vocal fry used in contemporary singing and extreme vocal effects used in other styles. See what is the suggested approach on these different music styles and try to incorporate it into my own teaching strategy.
4. Develop new exercises for fry scream and false fold scream based on my new research.	Action Upgrade my existing exercises with new ones based on my latest research. Request that my students fill out a survey to assess how much these exercises assist them in achieving successful fry and false fold scream.

REFERENCES

Aaen M, McGlashan J, Christoph N, Sadolin C (2021) Extreme Vocal Effects Distortion, Growl, Grunt, Rattle, and Creaking as Measured by Electroglottography and Acoustics in 32 Healthy Professional Singers

Dewey, J (1933) How we think

Driscoll, J (2007) Practising Clinical Supervision: A Reflective Approach for Healthcare Professionals, Bailliere Tindall and Elsevier, London

Ekman P, Friesen W (1975) Unmasking the face

Ghaye, T (1998) Teaching and Learning through Professional Practice: A Practical Guide for Positive Action, David Fulton Publishers, Oxford

Guzman M, Acevedo K, Leiva F, Ortiz V, Hormazabal, Quezada C (2018)
Aerodynamic Characteristics of Growl Voice and Reinforced Falsetto in Metal Singing

Harrison N, Watson A (2020) A singer's guide to the larynx

Izdebski K, Di Lorenzo E, Yan Y, Blanco M (2016) What we have learned about extreme metal production from HSDP

McKinney, James C (1994) The Diagnosis and Correction of Vocal Faults

Pikes, N (2004) Dark Voices: The Genesis of Roy Hart Theatre (New Orleans, LA: Spring Journal Books)

Sadolin, C (2021) Complete Vocal Technique

Sakakibara K, Kimura M, Imagawa H, Niimi S, Fuks L, Tayama N (2004) Growl Voice in Ethnic and Pop Styles

Titze, I (1994) Principles of Voice Production. National Centre for Voice and Speech

Titze, I (2015) On Flow Phonation and Airflow Management

Tsai C, Wang L, Wang S, Shau Y, Hsiao T (2010) Aggressiveness of the Growl-Like Timbre: Acoustic Characteristics, Musical Implications, and Biomechanical Mechanisms

WEBSITE REFERENCES

Melissa Cross Zen of Screaming

<https://www.youtube.com/watch?v=spZWQwxNKHg>

Complete Vocal Institute research

McGlashen, J, Sadolin, C (2017) Description and Sound of Creak and Creaking

Available at <https://cvtresearch.com/description-and-sound-of-creak-creaking/>

McGlashen, J, Sadolin, C (2017) Description and Sound of Distortion

Available at <https://cvtresearch.com/effects/distortion/>

McGlashen J, (2017) Grunt

Available at <https://cvtresearch.com/descriptionand-sound-of-grunt/>