

MODULE 1 - BMPF7047D

How can voice teachers leverage insights from the act of imitation with a particular focus on dogs vocalisations to develop effective vocal exercises?

4083 words, within the 10% over leeway

In recent studies, researchers have underlined the importance of imitation in learning (Marisi, 2021). Imitating abilities can progress in children in their early years as a skill requiring practice to be developed (Zamorano-Abramson et al., 2023). Imitation has always played a significant role in teaching singing as students often have to copy a model, like replicating a teacher's arpeggio demonstration. Hoch (2023) posits that the year 1854 marked an outbreak in voice pedagogy due to the laryngoscope invention, leading to a more scientific approach in teaching methodologies. Nonetheless, learning through imitation is still in use, and learning singing through the sounds of different species is common practice. Animal sounds imitation in singing starts at school, where the music educator may ask children to mimic various animals, copying their calls' volume, quality and pitch (Mizener, 2008). Imitating animals can then, according to Mizener, allow students to access different registers and embrace different voice types. With this in mind, this study aims to consider how the specific imitation of dogs' vocalisations can be helpful in the singing studio. First, we will review to what extent imitation is useful in singing and its effectiveness as a pedagogical tool. Then, we will analyse the similarities between dogs and human vocal apparatuses. Lastly, we will explore how canine vocalisations are already used in voice teaching and how to employ this knowledge for our strategy.

I work with a wide variety of students who almost all love animals. When doing online sessions from my home studio, my pupils' dogs and mine are often close to us. Talking about our pets regularly helps me express the type of sound I would like my students to try, asking them to imitate their cat, bird or dog. I am looking to understand the relationship between imitation and dogs vocalisations, to apprehend how it can concretely help students develop new types of sounds.

Imitation in singing

The definition of imitation as "the copying of behaviour" evolved throughout the years, mainly depending on the field of study (Zentall, 2006, p. 1). However, Fridland and Moore (2014) state that it stayed constant and did not follow the outbreaks of psychological research. While they seem to

agree with Zentall's meaning, they choose to add the concept of means and ends. They define "imitation as the reproduction of an observed behavior where the agent imitating (1) recognizes the behavior of the demonstrator as goal-directed and (2) has some particular interest in or concern for replicating the precise technique performed by the author of the observed action" (p.1).

Throughout this essay, we will use Fridland and Moore's definition. Indeed, it seems coherent to take into account their concept of "goal-oriented" as students come to voice teachers with a specific goal in mind, whether recreational or professional. The idea of mimicking a specific technique is also relevant to our research. In the singing studio, if we are indeed looking for acoustic results, we must consider that some approaches may potentially damage the student's voice. Thus, mimicry of a desired technique seems logical for our field of research, as singing students usually encounter more vocal health issues compared to laypeople (Saeedi et al., 2023), and pedagogy in itself should be promoting vocal health to students (Gill and Herbst, 2015).

There seems to be a consensus amongst researchers that community-oriented animals, including humans, first learn conduct through imitation of elders (Chan, 2017; Hodges et al., 2007; Ikeda, Trusel and Roberts, 2020), meaning that imitation would be an effective way of learning. This can be easily transposed in the voice studio: singing itself arises from imitation. Pitch replication is one of the components of singing, along with musical timing and emotional nuances (Pfordresher and Larrouy-Maestri, 2015). Sometimes, there is a deficit in the pitch imitation. This phenomenon is referred to as amusia: the person is able to trace and catalog tone variations, but imitation is poorly executed (Peretz, 2016).

Intuitive imitation failure in amusic people

Intriguingly, the researcher Peretz (2016) highlights how pitch insufficiency is only the result of amusia and not its reason. This allows us to loop back to our original definition of imitation by Fridland and Moore (2014), which takes into account the means and ends of mimicry for it to be considered "imitation". Amusic people are indeed goal-oriented in their pitch mimicry, yet imitation fails in the process as the technique is not well enough copied due to inferior cortex abnormalities, probably stemming from anomalous electrical brain responses (Hyde et al., 2006; Peretz, Brattico, and Tervaniemi, 2005; Peretz et al., 2009; Mignault Goulet et al., 2012; Tillmann et al., 2016).

We should point out, however, that peer-reviewed literature on congenital amusia from a brain perspective — as opposed to acquired amusia, which is not hereditary and appears with brain lesions (Sihvonen et al., 2019) — is recent. The first papers on the subject were written in the early 2000s, and findings are neoteric. Researchers sometimes correct themselves along the studies: in 2009, Peretz et al. explained how unusual "grey and white matter in the auditory cortex" (p. 1277) is linked with congenital amusia. However, in 2012, research done by Mignault Goulet et al., in which Peretz took part, claimed that the auditory cortex of the research participants did not present any atypicality, which seems to contradict the first statement. Nevertheless, this last research was conducted on children, while the first was about adults. There is then a possibility that abnormal quantities of grey and white matter only appear in the amusic brain from a certain age.

We might need more perspective on this matter, as most research linking congenital amusia and the brain features Peretz's findings, possibly involving a bias. However, the fact that she always works with different researchers depending on the papers may provide more authority.

Imitation as a pedagogical tool for amusic and non-amusic people

According to Tremblay-Champoux et al. (2010), imitation would be beneficial for amusic people as their pitch is significantly better when singing along with a model or repeating after an exemplar. Indeed, thanks to model imitation, amusic people would stop relying entirely on memory (corresponding to the brain's ventral pathway) to reproduce a pitch. Instead, they would use the dorsal pathway brain region (Tremblay-Champoux et al., 2010), "a pathway described as connecting the auditory to the motor cortex, through the temporoparietal junction, and known to be activated by action sounds, especially speech" (Lévêque and Schön, 2015, p. 58). We can suppose that imitation in itself would activate the dorsal pathway. If so, implications of imitation would be immense for non-amusic singers as they can rely on both memory and dorsal pathways. Moreover, we should mention that singing in the studio is essentially based on imitation when it comes to exercises. The teacher first demonstrates, then the student imitates the melody, sometimes also the intentions and the postures (Lã, 2012; Atkinson, Watermeyer and Delamont, 2013).

According to Marisi (2021) and Pellois and Gonzalez (2021), an important component of imitation in learning art is imitation by observation. Both studies highlight the importance of observing sufficiently and adequately, emphasising the idea of precision in observation. Pellois and Gonzalez even talk about "acuité d'écoute" (p. 25), which can be translated as "aural acuity", where the focus is particularly set on the precise attention used to listen, decoding pitches heights or phrasing rhythms. This underlines a concept brought by Bandura and Jeffrey (1973), where observational learning is described in four subprocesses, the first one being attention. See Appendix A for a subprocesses diagram. Bandura and Jeffrey's second step is retention, involving "motor rehearsal" (p. 123). This involves the repetition of actions to embed them in memory. According to Atkinson et al. (2013), repetition is linked to mimicry: processes must be repeated to be acquired. They warn, however, that imitation should not be the only tool used in the learning environment.

Imitation limitations

While agreeing with the general benefits of imitation, some researchers emphasise limitations. For Chan (2017), negative undertones often accompany imitation learning, "perhaps framed by viewpoints individuals have derived from experiences of rote learning and repetitive work" (p. 1). Chan here precisely highlights two key points mentioned before, that are indeed part of a useful pedagogical imitation: repetition, which can give a monotonous connotation, or rote learning if the attention that should accompany mimicry — according to Marisi (2021) and Pellois and Gonzalez (2021)'s guidelines — is missing. For von Germeten (2021), it is the idea of simplicity that perturbs the detractors of learning singing through imitation, considering it a "shortcut" (p. 68). He

addresses how imitation can, for skeptics like Berg (2011), stop learners from finding their own personal voice.

Nonetheless, most of the research seems to agree with imitation benefits: all of the recent papers reviewed only pointed out mimicry's flaws in articles that precisely promoted it.

Similarities between canines and human vocal apparatuses

To study how canine sounds imitation can be helpful, we ought to understand dogs' physiology. Most of the research about human vocal apparatuses uses dogs larynges, because of their similarities to humans vocal tracts and vocal folds (Garrett, Coleman and Reinisch, 2000; Kim, Hunter and Titze, 2004). According to Hye Rhyn Chung et al. (2023), those similarities involve physiological components as well as "comparable vibratory patterns" (p. 265).

However, when Hye Rhyn Chung et al. (2023) underline a similarity in the thyroarytenoid muscle, Kim, Hunter and Titze (2004) point out a difference between humans and dogs' thyroarytenoids, "such as differences in mass, cross-sectional area, and fiber orientation" (p. 60). According to them, these differences also apply to cricothyroid muscles.

Even though their study was realised nineteen years earlier, it is possible that Kim, Hunter and Titze (2004) focused more on those discrepancies than Hye Rhyn Chung et al. (2023), whose study was about vibration patterns, not about the exact composition of the tissues. The chosen angle for the research can explain those differences: acoustic for Hye Rhyn Chung et al. (2023) and physiologic for Kim, Hunter and Titze (2004).

However, we must note that even if dogs' oscillatory patterns are often similar to humans', the two species' vocalisations hold dissimilarities. Dogs vocalisations can be barks, howls, growls or whines, each call with a specific function (Yeon, 2007; Faragó et al., 2017). According to Riede et al. (2005), some vocalisations work thanks to cyclical vocal folds oscillations, therefore comparable to humans', but some are too irregular, too turbulent, hence considered nonharmonic.

Dogs vocalisations also have specificities, such as non-linear phenomena, which is "the occurrence of irregularities" (Marx et al., 2021, p. 1) in the sound, like subharmonics or deterministic chaos, defined by a "loss of harmonic structure" (p. 2).

Thus, it might be pertinent to focus only on imitating dogs sounds to explore our voices possibilities, without comparing acoustics yet.

Puppy whines: commonly used exercises

In the singing studio, dogs vocalisations have been used for decades with puppy whines. Singing and choir teachers seem to agree on their efficiency. In the seventies, they were already recommended to directors to help boys find their "ideal boy choir tone" (Swanson, 1975, p. 11). Swanson highlights the importance of acting, impersonating a whining dog.

Whines are often used as the first part of a large siren exercise and never seem to be employed alone (Swanson, 1975; Kayes, 2015), suggesting that they are insufficient warm-up per se.

According to Marquart (2005), they help feel the face resonators to place a sound. Kayes (2015) and Kilcoyne (2019) add that puppy whines help discover head voice by identifying the use of the cricothyroid and learning how to tilt the thyroid forward.

Some singing teachers also agree on the utility of cool-downs using hummed puppy sounds (Ufema and Montequin, 2001; Teik Poi Tan, 2020), even though they do not explain their direct role in warm-downs. In this case, whines do not evolve towards larger sirens, as they did with Swanson's (1975) and Kayes' (2015) warm-up exercises.

Marquart (2005), however, explains how some students might feel stressed playing a role if they think other people can hear them, which limits Swanson's point of view stating how singers have to parody dogs: stress has an impact on lower airways, including the trachea, altering voice production because of strained vocal folds, leading to an inconstant voice (Holmqvist Jämsén, 2017). For Swanson, the limitation of puppy cries lies in the fact that an element of surprise (here, imitating a puppy) enhances the efficiency of the exercise: this element evaporates rapidly.

Strategy

With our understanding of imitation for learning new patterns and behaviours (Fridland and Moore, 2014), we can develop a strategy using puppy whines mimicry in vocal warm-ups and cool-downs in the studio. We can also integrate dog howls that are typically done in head voice when imitated. These exercises allow students to fluidly access head voice by perceiving cricothyroid activity. See Appendix B for a lesson plan exemplar, which presents a singer trying to move easily into head voice.

In step 4 of the exercise plan, we illustrate emotions summoning (Swanson, 1975). According to Marx et al. (2021), using emotions is useful to engage voice muscles in a way that changes the tension of the vocal tract muscles. This helps to detect specific emotions in someone's voice. This step should only be introduced if the teacher knows the student feels comfortable enough for animal imitation (Marquart, 2005) in order not to create stress and voice tension. Indeed, students want their sessions to be based on a partnership with the teacher and want assistance when feeling stressed (Kiik-Salupere and Ross, 2011). If the student does not feel relaxed, breathing exercises can be useful to calm them (Jerath et al., 2015). If this does not suffice, the teacher shall create a trusting atmosphere so the student feels they can confide in why they do not feel at ease. The objective ought not to be proficiency in executing the exercise but rather to ensure the student feels comfortable enough to continue their lesson in a relaxed state of mind. This would strengthen the link student-teacher, establishing a foundation for future progress. Once the student is ready for the exercise, they could choose a situation involving the whining puppy, such as begging for a treat.

In step 5, we describe how teacher demonstration can make imitating dogs vocalisations easier so the student can observe nonverbal cues. Even if the student is not aware of some positions that can help the whining/howling puppy sound—such as droopy lips or lip rounding, respectively—it will help them copy this physical component if the teacher does so while demonstrating (Daugherty and Brunkan, 2012).

When we take step 7 of the lesson exemplar, we encourage the student to try different starting pitches so they can begin in their comfort zone with minimal vocal effort.

Step 8 suggests a small siren from head to chest voice, encouraging "a change in vocal fold medial surface contact" (Bozeman, 2022, p. 182).

Gradually expanding the wideness of the siren on step 9 allows more fluid access to head voice, where stretching of the cricothyroid happens with "vibration only of the edge of the cover" (Bozeman, 2022, p. 182). Vowel /u/ is used to unlock head voice more easily (Kaelin, 2012). Steps 10 and 11 enable tension, length, thickness and mass adjustments of the vocal folds as well as subglottic pressure adjustment when balancing registers, passing from head to chest voice, then from chest to head voice (Hollien, 2014).

Regardless of the exercise's result, the teacher should adapt to each student by choosing a pedagogical path suiting the student's needs, motivations and ways of learning (Marisi, 2021).

Conclusion

We explored how imitation is useful in the studio for both music and amusic singers, and how it is one of the primary tools to teach singing. However, mimicry should contain the goal-oriented concept and copy a specific technique, as defined by Fridland and Moore (2014). For imitation of dogs vocalisations, the most common use in voice pedagogy is the puppy whine, which has been employed for decades. Perhaps the similarities between humans' and dogs' vibratory patterns are what makes canine imitation easy. The goal of puppy whine use is to access head voice effortlessly, feel the cricothyroid in action and start a warm-up or a cool-down session.

For further research, it might be interesting to look at other types of dog vocalisations and see if they can be applied to voice teaching. For instance, dog growls could be useful to copy in order to learn voice growls and grunts in aggressive singing, used in genres like death metal or heavy metal. The use of acting and using emotions, prescribed by Swanson (1975), could also be used as dog growls usually manifest with aggressive or sometimes playful dog behaviour (Yeon, 2007), and the student could then imitate different dog intentions. Also, it might open different styles of voice teaching, where the relationship with a pet is explored. This could lead to lessons that students attend with their dogs, crafting their singing practice around the type of sounds their dog makes, to explore their own voice's potential in an entertaining learning context. Of course, vocal health should be taken into account (Gill and Herbst, 2015). Thus, this idea necessitates further exploration: perhaps some types of dogs vocalisations are detrimental to the vocal folds' health.

Critical reflection

Before starting the critical reflection, I was drawn to Rolfe, Jasper and Freshwater's (2001) model: the simple three steps seemed adequate to critically reflect on the evaluation process, as this is my first time writing at Level 7. According to Thompson (2021), their model, similar to Borton's (1970) and Driscoll's (1994), is a good "starting point" (p. 10) to understand "an event". However, this also being my first critical reflection, I did not know how to initiate the process and experienced the three-step model as too vague. I explored other options discussed in class and felt reassured by Gibb's (1988) approach, with six stages, precisely categorising the information needed for each phase. Fallin (2021) critiqued Gibb's Reflective Cycle, deeming it dull, leading to shallow analysis, partly because of the obligated structure of six steps. These stages are what comfort me about this model; I will attempt to use Gibb's approach with substance.

Description

In this module, my goal was to combine my interest in dogs and teaching. I was interested in examining how dogs vocalisations imitation could help singing students in their practice. First, I aimed my research towards papers on imitation alone, then on imitation for singing. Next, I explored canine physiology articles to compare with human physiology. I found numerous papers on dogs' behaviour, which made my reading process less fluent. I selected only peer-reviewed papers in this browsing process, asserting their credibility (Nicholas et al., 2015). To explore exercises related to dogs already in use, I only found a few peer-reviewed articles and had to look for singing teachers' books instead of papers.

Feelings

I was excited about my research title, as I was convinced — and still believe — that working with dogs can bring new perspectives to the singing field. I was grateful to have the opportunity to learn and work towards a first step in the dog-singing relationship. This feeling of motivation helped me to stay driven throughout the entire module. According to Troia, Shankland and Wolbers (2012), motivation is essential for effective learning. It helped me set a vision for future work, even when I overcame negative feelings during the process. For instance, I felt anxious when I realised that in order to delve into dogs vocalisations, the word count on parts about imitation needed to be increased to set a clear foundation for the rest of the research. I feared that the entire paper would become about mimicry, leaving the dog component for future research, and I was concerned that it would make me lose motivation. Later in the evaluation, my subheadings shifted towards a more defined form, and I regained confidence.

Concerning choices I made, I also feared that my essay was not related to singing enough. Indeed, if a single component is isolated, the relation to voice might not be evident as I worked progressively from imitation to dogs vocal apparatuses, and then on how combining these could serve singing.

Evaluation

Material on imitation and dog vocalisations was easily accessible, which saved me time in the process.

I encountered a confusing difficulty: for a few topics, all my sources converged towards the same conclusions, and it was challenging to find modern and credible opposing views to balance the ideas I was evaluating. For example, Peretz signed every paper I found on amusia. I managed to find small disagreements between authors, but I feared I was twisting their stances. As a person who values balance and has difficulties to take a stand, it helped me develop a somehow more assertive writing style than usual.

Because of the relatively small word count, I also had to select which themes should be included, which was challenging. Some aspects were fascinating but were eliminated. For instance, I wished to compare dogs and humans vocalisations' acoustics to explore how dogs' imitation could help understand the human voice harmonics.

Overall, as my time on this paper was limited, I feel like the evaluation was quite logical, at least in form, as the developed topics seemed to have been articulated well. However, I am still unsure of the content quality.

Analysis

The handbook states, "Choose a topic that excites/ fascinates you" (Voice Study Centre and UWTSD, 2024). It made the process easier. As a curious and by some means disorganised learner, I like to explore numerous themes. This statement helped me to be more decisive about the topics I wanted to investigate and to summon the motivation I needed, even knowing that my writing skills in English would slow me down and might alter my motivation, which is in itself beneficial for writing (MacArthur, Philippakos and Graham, 2015).

My time on this essay was limited due to my personal schedule, and my draft had to be finished by April 1st. It helped me not spend too much time hesitating and facilitated my efficiency: a positive aid for the doubtful person I am. This is supported by Parkinson's Law (1955), stating that "work expands so as to fill the time available for its completion" (p. 1). However, if I spent more time researching literature before starting to write, I might have seen in advance how all the sources supported each other and perhaps would have been more precise in my search for small disagreements throughout the readings.

My passion for dogs probably influenced my decision-making in the essay. I could have spent more time on the different views on imitation according to psychologists, but I would have had to sacrifice the part on dogs sounds, possibly making me lose motivation.

The tutoring sessions were undoubtedly beneficial, serving as checkpoints in the research and bringing me supportive encouragement.

Conclusion

I learned about topics I did not know I would encounter in this paper, such as amusia, which was a pleasant surprise. It helped me keep an open mind as a learner, which is crucial, according to Dewey's views on education (Hare, 2004).

Also, the captivating papers I read about specific harmonics in dogs vocalisations motivated me to delve more into formants and harmonics in the human voice. These new perspectives inspire me to learn more than the basics: my learnings on dogs' acoustics opened a new dimension in music for me.

My ability to make fast decisions improved thanks to this evaluation and the brief time frame I allowed for the module. I am pleased I could at least send it in time.

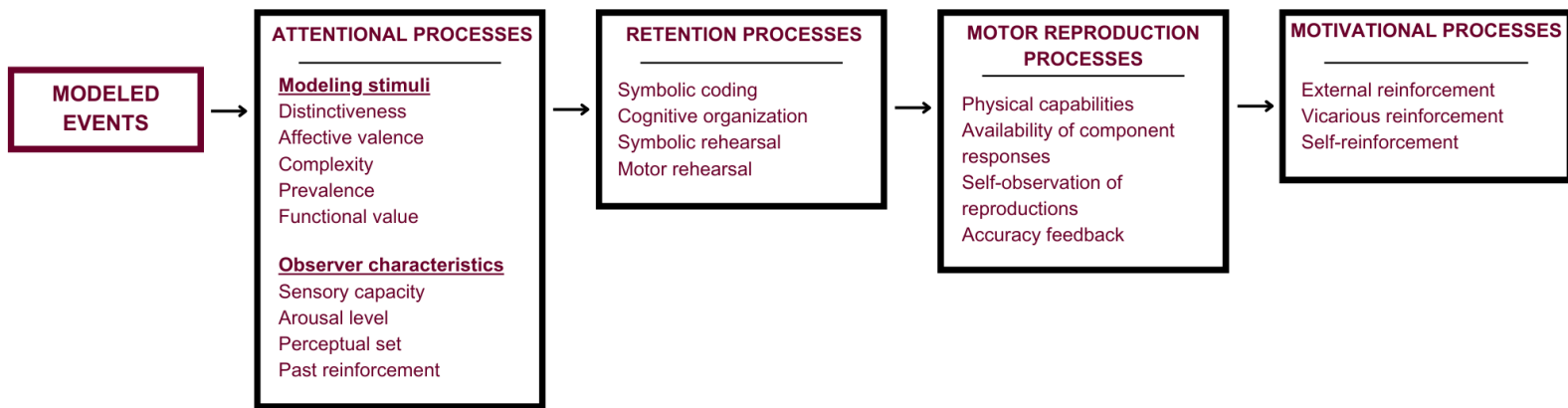
Action plan

Based on this reflection, it seems that setting an earlier date to finish an essay would help me in my decision-making process and work more efficiently.

The insights I gained from evaluating different teachers' books or articles, such as Marquart (2005), Kayes (2015) or Kilcoyne (2019), will help me to put into practice the puppy whines exercise more productively, perhaps by communicating more with the student about the purpose of the exercise. For further development, I will seek more information on human acoustics, now that I have a dog-related motivation to compare the two species.

See Appendix C for a detailed action plan in the PDP.

APPENDIX A - Bandura and Jeffrey's (1973) four subprocesses for observational learning



Bandura, A. and Jeffrey, R.W. (1973)

APPENDIX B - Exercise plan

Darra is a beginner male student with a bass voice type who struggles to access his head voice. He wants to develop his higher range but feels stuck when trying to access higher notes. He describes his higher range as strained. His voice sounds steady up to Bb3. From there, he can sing up to D4 using a pulled chest voice with pressed phonation, adding tension to the vocal folds, raising the larynx, and being a little bit flat.

The goal of this exercise is to find access to head voice, to facilitate the way towards higher notes and to start balancing registers.

1. Verify whether Darra is interested in animals at all. As he is, it will be simpler to connect over the exercise.
2. Briefly ask Darra about his favourite dog breed and about what he particularly likes about it. He mentions the labradoodle. The goal is to get him enthusiastic and motivated.
3. Watch a short video on YouTube of a whining puppy labradoodle as a model to copy. Dog videos of any breed are easy to find on YouTube's search engine.
4. Ask Darra to name the YouTube puppy's emotion so he can animate his whines with the same emotion.
5. Let the video roll while the teacher and Darra imitate the whining puppy. This way, it is not too intimidating at first. It also allows the teacher to give nonverbal cues for mouth shaping, relaxing of the jaw and overall body posture.
6. Stop the video and do a few more puppy whines, focusing on the feelings inside the throat. It should not feel tense. If it does, ask Darra to tone the puppy's emotion down and only focus on the sound.
7. Try different pitches for the whine to start.
8. Move on to a small siren, humming from head voice to chest voice. If needed, reassure Darra that there is nothing to be ashamed of if the voice breaks at this point.
9. Gradually improve the range of the siren, always starting in head voice. The teacher can demonstrate the sound of a howling dog on the vowel /u/.
10. When this becomes easy, on the same breath, go from head voice to chest voice, then to head voice again, finishing in chest voice, where the feeling is known and comfortable.
11. Continue with a large siren covering the whole range, going down and up multiple times on the same breath, always starting in head voice.
12. If possible, try starting from chest voice, then move up towards head voice, imitating a wolf howling.

With this exercise, Darra can easily practice access to head voice at home. The exercise only takes a few minutes and does not require any specific melodic pattern or instrument.

APPENDIX C - Personal development plan

Why am I doing this MA?

I initially enrolled in this course at the same time as a professional coaching program because I longed for deeper connections with the people I work with. The more I teach, the more I understand how each student is unique. While being used to finding the right exercise for each type of voice and personality, I also felt I needed to learn more about pedagogy in general to adapt my teaching methods even more. The goal was to craft a deeper relationship with my students so they could benefit from their lessons even more.

As my learning style encourages novelty, I always wish to learn about various topics. The themes covered by the MA aligned perfectly with my desire for learning, which sometimes changes in interest but always remains around the voice.

What is the direct benefit for me?

I need to stay engaged in new voice findings in order to be adequate in my work. Perhaps there is a psychological component accompanying this, but I always fear that my knowledge is not up-to-date with recent vocal discoveries, as my students would miss out on information and not make the most of their sessions.

The first direct benefit is three years of ongoing learning and a new experience in life. I never dared dream about returning to university, and I am now excited about the opportunity to complete this MA.

On a more practical side, I believe that another degree would allow me to raise my fees and start a more comfortable life.

PERSONAL DEVELOPMENT PLAN

based on highspeedtraining.co.uk's model

OVERALL GOAL	DEVELOPMENT OPPORTUNITY TO MEET MY OVERALL GOAL	WHAT I WILL DO TO ACHIEVE THIS	TARGET DATE FOR COMPLETION
LEARN MORE ABOUT FORMANTS AND HARMONICS	Develop my mathematical understanding about acoustics in the human voice	Read again Ken Bozeman's first book "Practical vocal acoustics"	August 2024
		Watch at least 3 VSC's short courses on formants and harmonics	August 2024
UNDERSTAND IF GROWLS AND GRUNTS IMITATION COULD BE BENEFICIAL FOR SINGERS	Understand the physiology of growls and grunts in aggressive singing	Rent Melissa Cross' DVD "The Zen of Screaming"	September 2024
	Learn about dogs behaviour when growling and grunting (for emotional imitation purposes)	- Reach out to my dog's former educator - Borrow one book on dog behaviour analysis at the Public Library	May 2024
BE MORE DECISIVE IN GENERAL AND IN MY ACADEMIC DECISIONS	Letting go of my second-guessing habit to save time	Meet with my life coaching partners and do one full session on the topic	May 2024

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