Module 5

BMPF7013F

Working and Learning: An Introduction to Work-Based Higher Education

Project title:

The Silent Singer: Building on PETTLEP to Devise Imagery Scripts for Singing Training

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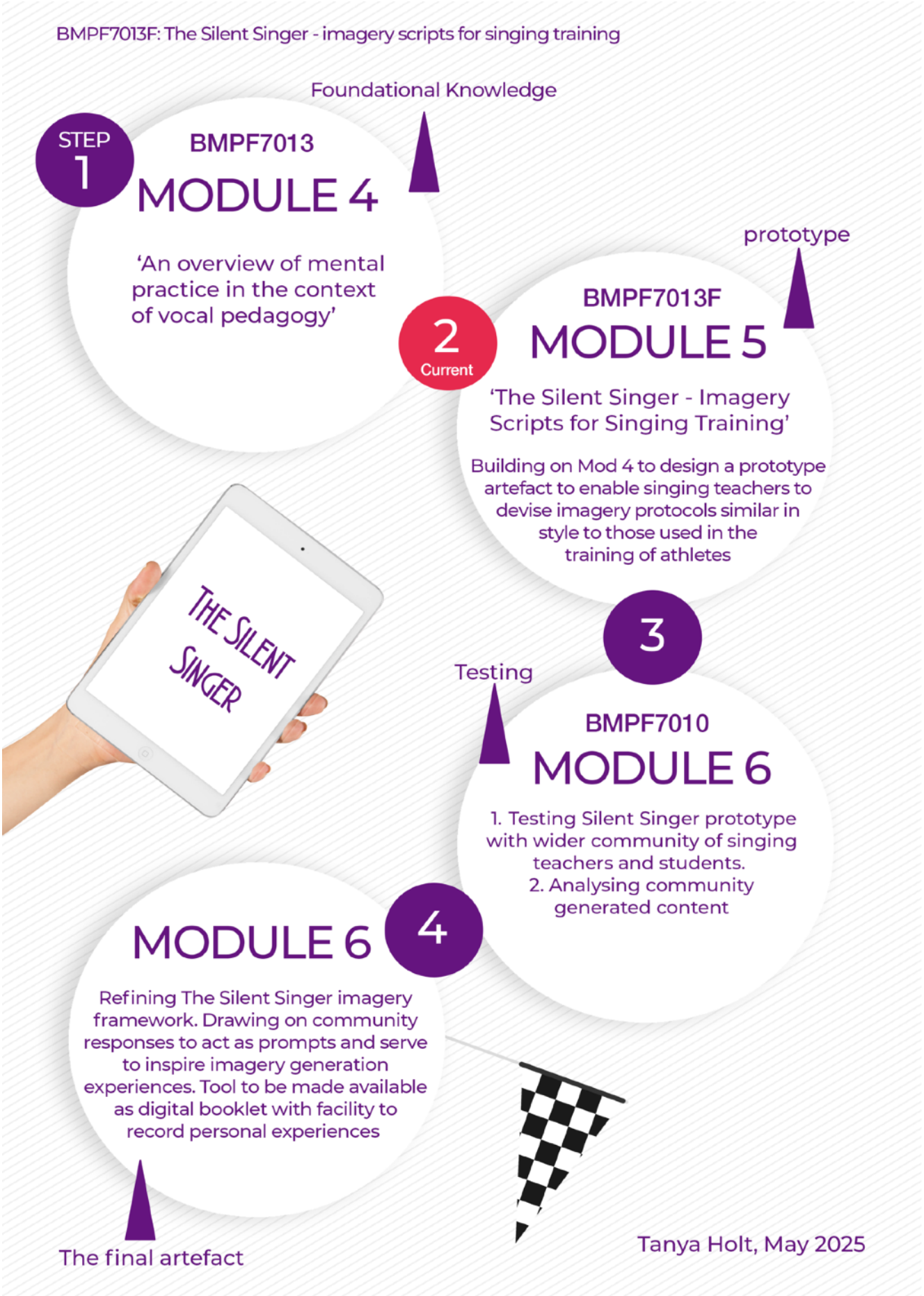
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Identifying the problem at a glance

Why do this?	**MAKING SINGING TEACHING EASIER** As singing is a predominantly covert activity, with many mechanistic processes hidden from view, singing teachers are required to exist in an often demanding, perpetually evolving state of linguistic innovation in order to convey abstract ideas. This proposal posits that a collaborative student teacher approach to developing personalised imagery scripts will reduce this linguistic pressure and be more effective in developing motor and kinaesthetic skills	**Portfolio**
How?	**IMAGERY SCRIPTS** By extracting value from previous research on imagery use, along with further studies that explore the use of imagery scripts in skill development. Additionally, by identifying key practitioners and experts, along with case studies and pedagogic influences. The aim is to find transferability from this research into singing training, thus informing the design and content of the artefact	**The Study**
What?	**A FRAMEWORK FOR VISUALISATION IN SINGING** A first iteration of a digital booklet for teachers that explains core concepts of imagery scripts and imagery types and provides a framework on which to collaborate with their students to build task-specific imagery. The existing PETTLEP visualisation framework will form the basis of this new ‘singer-specific’ prototype. The digital booklet will include illustrative examples of imagery use along with a self-populating form to record imagery experiences	**The artefact**
What next?	**TESTING THE ARTEFACT - BMPF7010** The Silent Singer will endure a period of testing with the wider singing teaching community while also recruiting examples of problem-solving using imagery use. This process will entail the use of questionnaires, similar in style to existing studies on imagery-use in elite sports and dance (appendix 2). This community-generated feedback will inform the final content of the Silent Singer; an ‘almanac’ of first-hand experiences of image-use for specific technical, artistic and emotional elements of singing and performance that will serve to illustrate, inspire and encourage the use of imagery for teachers and students alike.	**Module 6**

An Overall Perspective - from module 4 to module 6



Project portfolio

Introduction

As the act of singing is largely sensation-based (Madill, 2025, Moss-Erickson, 2025; Reed et al., 2021), singing teachers, like myself, depend on spoken word, metaphor and analogy to direct individuals in developing kinaesthetic awareness to improve motor skills. This necessitates foundational knowledge of the covert mechanisms of sound production, along with an understanding of psychological and neurological phenomena, as well as the ability to express ourselves with minimal ambiguity. Essentially, singing teachers, are required to exist in a perpetually evolving state of linguistic innovation, which, in my experience, can feel overwhelming. Additionally, as metaphoric language is intended to convey abstract ideas by provoking vivid imagery, it is open to the interpretation of the receiver and, as such, becomes a subjective personal experience that is difficult for a teacher to objectively evaluate (Pearson, 2019). The aim of this study is to develop an artefact that could help singing teachers mitigate some of this pressure by using *Imagery scripts.* Imagery scripts are used extensively in sports psychology for skill development; essentially, athletes work collaboratively with their coaches to develop personal imagery to enable the mental practicing of their sport and to prepare for the anxiety of performance (Holmes and Collins, 2001). As there is exciting and compelling evidence for the efficacy of mental practice in physical skill development in a wide variety of activities, I would suggest that there might be an intersection with singing training (Janjigian, 2024; Ruffino et al., 2021). The nature of imagery can be kinaesthetic, auditory, motor or visual. The immediate aim of this practice-based research project (PBR) is to develop an artefact that has potential to provide singing teachers with a practical, formalised, visualisation protocol, along with foundational information about the benefits of imagery-use in pedagogic settings. The longer term aim, to be developed in module 6, is to supplement this with illustrative, first-hand experiences of imagery-use drawn from the wider singing teaching community. The artefact is presented as a digital handbook called *The Silent Singer* (referred to hereafter as the *artefact)* and, along with the visualisation protocol, includes a glossary of imagery types and terms, examples of practical applications and for purposes of module 6, the facility to self-report and share any successful or unsuccessful interventions, with the author. This visualisation framework is modelled on the existing PETTLEP model, investigated in module 4, which is underpinned by clinical, academic and pedagogical research (Holmes and Collins, 2001, 2002). The framework is constructed around a clear, easy to understand, seven-point imagery intervention list: Physical, Environment, Task, Timing, Learning, Emotion and Perspective. Each of these will be explored in terms of the original intention of the PETTLEP authors, how this might manifest in practical settings along with suggested transpositions to the singer's practice. While it will still be necessary for teachers to use language in order to guide the student in evoking imagery, the artefact includes prompts, by way of examples drawn from existing pedagogy along academic studies. This PBR provides a formalised opportunity for me to explore

and develop a strategy that feels meaningful, employs deep critical thinking and may have benefits for the wider community (Martin and Saljo, 1976).

Simon Sinek's methodology *Start With Why (*https://simonsinek.com/golden-circle/*)* has provided an invaluable planning framework. Essentially, Sinek, a well-known author and educator, posits that by asking ourselves 'why?' we do things, before we think about 'what' we are going do and 'how' we are going to do it, improves the quality of the outcome. Following the principles of Sinek's Golden Circle will provide direction and purpose in planning this Module 5 project while keeping the continual development of the professional practice, at the heart of the process.

Why? How? What?



https://simonsinek.com/golden-circle/

Why? Justification

In the broader scheme of my professional life, undertaking a Masters requires significant time and resources and is the outward manifestation of a commitment to continuous learning and growth; the ultimate goal is to direct positive change in mine and my clients' lives. In other words, I want to be as effective as possible as a singing teacher. I would also like to extract value from previous research; 'An overview of mental practice in the context of vocal pedagogy' (module 4). This inspiring exploration of the evidenced value of using auditory, visual, kinaesthetic and motor imagery in physical training, introduced me to the notion of imagery scripts. Converting this theoretical knowledge into a practical application, often described as PRAXIS (Aristotle, 335-323 BC; Nelson, 2022), in the form of an artefact, will demonstrate evidence of my previous research, and may make these efforts feel self-validating (Nelson, 2013, 2022). I also consider that having spent time exploring the potential benefits of this new area of study, I would like to share these

findings, through the artefact, with the wider singing teaching community who may be less inclined to read academic or niche publications (Plavén-Sigray et al., 2017; Thompson et al., 2018). As a singing teacher myself, I feel I would have made use of an artefact such as this, if it had been available to me.

Since researching module 4, my awareness and enthusiasm for the use and value of imagery and mental practice, has begun to have a positive influence on my professional practice. Not only am I building on previous research, I am developing new theories and practices based on experiential experiences. To give context to this statement, and to further underpin the 'why do this?', I would like to use some illustrative examples of strategies used with my students that depend on kinaesthetic, visual and motor imagery in order to enable an objectively measurable outcome. In the first example, when introducing an eleven year old to the notion of *twang* (a term used to describe a harmonically bright tone) which requires narrowing of the pharynx, I used my fingers to illustrate narrowing and I was deeply impressed by how quickly she grasped the concept. "It was easy" she said, "I just imagined I was a flamingo!". The suggestion of narrowing being associated with a flamingo's long neck has now proved effective for other students and is easier to teach than a description of lateral to medial narrowing in the pharynx and how it feels in my own throat. This pragmatic approach (working creatively with the character and skill level of the individual) is mirrored in Kolb's (1984) experiential learning cycle; acquiring and contextualising theory, condensing theory to a finger gesture, the child associating that finger gesture to a flamingo's neck, successfully delivering an objective outcome; 'flamingo' represents twang. Having reflected on the successful outcome, the flamingo becomes part of the practice vernacular and will evolve through experimentation to reflect other students' unique experiences. In terms of an image script, the original learner will image the flamingo when stylistically necessary and as they improve, the image may require modification (Holmes and Collins, 2001). In my second example, a young singing student prepping for a big audition was struggling to remember the words to her songs; drawing from my own experiences as a singer and a singing teacher I suggested she try using highlighter pens to enable colour visualisation of the forgotten words as they appeared on the printed page (a strategy used by Dame Judi Dench) or to associate objects with similar sounding names, to the forgotten words. Neither of these strategies was effective. Finally, by devising some simple choreography, small steps, weight shifting, hair touching and direction changes, she immediately began to remember the lost words by associating physical movement to the word. A session of silently practising her songs with her choreography resolved the problem entirely and the choreography became increasingly less overt. She is likely to use physical movement as an aide memoire in the future, which could perhaps be included as part of an imagery script (Moss Erickson, 2025). I see myself as a facilitator of participatory learning and these student-earned eureka moments are crucial to their sense of self-efficacy, which, in turn, maintains interest and feels validating to me as a teacher (Patston, 2016). Exploring the 'why' in this structured way adds validity and clarity to the purpose of this project.

Aims and Objectives

AIMS	To explore Imagery use in singing training, an area of my practice that requires developing
	To continually re-invigorate my students' learning experience and therefore my practice
	To encourage students to explore their learning potential and develop self-efficacy through imagery use
OBJECTIVES	To respond to a lack of singing-specific literature on the use of imagery scripts in singing training
	To find transferability of effective image use from other fields of physical training
	To develop a prototype of a digital booklet to assist teachers in devising imagery scripts
	To provide students and teachers with the potential of a practical means of chronicling outcomes of using imagery scripts
LEARNING OUTCOMES	To be able to devise effective imagery scripts in the context of singing training
	To understand how imagery scripts might improve motor learning in the context of singing training
	Existing qualitative studies on themes and content of imagery use in sports and dance provide the basis of a framework for developing a questionnaire to generate the community-content that will form the basis of the final iteration of the artefact (Martin et al., 1999; Nordin and Cummings, 2006a)

Timescale Gantt chart - See Appendix 1

How? Process of methods that bring the 'Why' to life.

Best Practice Influences

Module 4 research on imagery identified relevant areas of interest which should ensure that the artefact meets its objectives. The literature examined at that stage was predominantly white literature and of a clinical and academic nature. However, bridging the gap between this theoretical knowledge and an effective practical application has necessitated engaging with the work of current key practitioners; for example, enrolling on courses in neuroscience and motor learning, with specific relevance to singing (with Heidi Moss Erickson and Cate Madill) has not only been elucidating but has provided guidance on source material and further reading. A course on using visualisation in contemporary riffing with Natalie Weiss, is supported by evidence of intention and effect in more academic journals. She is a singer and singing teacher herself and her work draws from first hand experiences that mirror my own. Similarly, a television documentary and a podcast on using imagery in post-injury rehabilitation presented examples of the work of key practitioners in these fields, along with those patients who have first-hand experience of using imagery scripts. All

referenced practitioners in this paper have accrued sound professional credentials. As the PETTLEP model of visualisation underpins the artefact, and is in current use in sports psychology, examples of outcomes in the field, not necessarily facilitated by individuals with academic or clinical credentials, also hold value (Nelson, 2022).

Literature Review Process and methodology

Where so many 'invisible' forces are at play (including neurological, physiological, psychological, emotional and artistic phenomena), singing teachers need to be flexible and reflexive in terms of how, what and who they teach and my approach is necessarily pragmatic by nature. Integrating theory with practice must, by necessity, be learner-centred. In keeping with this approach, the literature being reviewed for this paper reflects relevance to my professional practice based on the acronymic seven point, intervention check list present in PETTLEP: Physical, Environment, Task, Timing, Learning, Emotion and Perspective. In a sense, the PETTLEP model itself provides the methodological framework for the research process. Furthermore, a three-point 'micro-methodology' for each of these areas includes the following: Holmes's and Collins (2001) original intention, in-practice examples in all fields of physical training and relatedness to singing and singing training. Additionally, as this artefact is in development, I have given consideration to the methods I will use to collect data in the next phase of development, and as such, I have identified imagery studies that may have design methodologies that could provide the basis for my own (DeSantis et al., 2021, 2022; Hall et al., 1998; Nordin and Cummings, 2006a). Finally, as this is practice-based research, I am mindful that the design and content of the artefact must satisfy my professional needs, for example fill a gap in my knowledge and provide my students with new ways of learning, along with fulfilling the criteria assigned by the University of Wales Trinity Saint David.

Keywords/phrases: imagery, sports psychology, imagery and performance, singing pedagogy

Inclusion and Exclusion Criteria

All literature is as recently published as possible, however, I felt disinclined to bind myself to a specific cut-off date as this might exclude excellent source material that could lead to further papers via citations. Instead, if a particular literature search produced a wide choice of options, the most recent publications would be selected. All white literature is peer reviewed and preferably to have been cited by other researchers. Additionally, my previous research for module 4 demonstrated a wealth of academic and clinical studies in sports psychology, where funding is probably more available than singing-related research, therefore, an exploration of grey literature from singing pedagogues and field practitioners proved necessary (Cadill, 2025; Moss-Erickson, 2025). When approaching an academic review from a position of limited knowledge, reading the abstract of a paper has been helpful in determining what is not relevant. As a singing teacher I am less inclined to concern myself with research on the minutia of complex neural connectivity in

imaging, for example, when the outward manifestations of motor, kinaesthetic, visual and auditory imagery are of relevance to my practice and therefore a base understanding of such, is sufficient.

What? The artefact

A digital booklet to be used by singing teachers in collaboration with their students.

I have chosen to produce a digital booklet for these reasons:

- That I am self-confident with graphic design
- A digital booklet is cheap to create and reproduce, can be easily edited and shared and requires no technical skill to use
- The nature of the intended area of focus can be well-documented using words / language presented in a two dimensional format
- The final phase of the development includes a self-populating form and therefore a digital environment is practical

To fulfil the ambition of the artefact, the contents must be presented in easy-to-understand terms using colloquial language and colourful design and include the following information:

- An Introduction to the author and the motivation for the project to enable an understanding of the positionally of the author to the subject being explored
- An imagery glossary for understanding imagery types, crucial to the devising of imagery scripts
- So what? Why should singing teachers bother with this? Evidence to support efficacy of imagery use in developing motor skills, audiation and emotional regulation
- Examples of in-practice repurposing of imagery skills from sports to singing training (Module 6)
- Description of the term ‘imagery script'
- What to consider before an imagery intervention
- An explanation of the visualisation protocol being used: PETTLEP
- PETTLEP - the 7 point check list discussed individually; Physical, Environment, Task, Timing, Emotion, Perspective
- Self-populating form for feedback to the author
- Recommended reading

As the development of the artefact is being created by a singing teacher and intended to be used by fellow teachers, the inclusion of academically and scientifically-underpinned explanations are included to provide reassurance, validation and inspiration for student and teacher alike; in my professional experience it is easier to persuade a student of the merit of a particular course of action when it can be demonstrated as scientifically underpinned. In recognition of the evidenced need for repetition to reinforce learning to the point of automaticity, an adaptable ‘aide-memoire’ template is supplied for teachers or students to self-report; this form can be shared voluntarily

with the author as part of the research for module 6. The act and effort of articulating, transcribing and seeing words on the 'page', might in itself, provide adequate provocation to reenact. Such an approach might also inspire self-efficacy in students and perhaps allow them to appreciate how they can help themselves to reach their goals (Patston, 2016).

Why this title?

I was inspired by the title of dancer/choreographer, Twyla Tharp's book, The Creative Habit; this title captures the essence of the book succinctly, and is thought-provoking in itself. The Silent Singer asks the reader to consider what 'silent singing' might mean with further consideration to the multiple elements of singing (physiological, psychological, artistic) without creating sound. In other words, it is thought-provoking.

Critical Reflection

I acknowledge that the value of reflection is not so much a post-mortem examination of the study achieved, with the benefit of hindsight, but an ongoing cycle of events that has been morphing and informing the progress of the project at every turn. I have chosen to use a model of reflection that I am already familiar with, as I have been steeped in academic literature and this model, by contrast, feels manageable and straightforward in its framework; Borton's (1970) model of reflection offers an attractively accessible way forward that is structured around three questions: What? So What? and Now What? In essence, these questions helped identify the purpose of the learning undertaken, identified what had been learned, both in terms of the research and the research methods and, in the same dualistic way, what has been absorbed into my professional and scholarly practice that has relevance to my practice both now and going forward.

What?

I had taken the opportunity in a previous module (4) to acquire foundational knowledge on the use of mental imagery in developing motor skills. While filling a gap in my professional knowledge, much of the literature examined was generated from elite sports studies, with very little evidence of an applied application to singing training. This research has provided an opportunity to explore transferability from other fields of physical endeavour to singing training. I was concerned during module 4 that my learning would become redundant if I could not implement a practical strategy. As there is so little evidence of existing singing imagery protocols, I wanted to create an artefact that could provide the foundation upon which singing teachers, including myself, could build and report on their own experiences of imagery interventions. The beginnings of a community contributing tool that could be used in the future that feels meaningful, exciting and manageable. Through the seminars provided by The Voice Study Centre to accommodate the academic demands of this module, I learned of the importance of evidencing research and the value of

converting theoretical knowledge into a practical application, which I found encouraging (Nelson, 2022).

As a scholar, I wanted to improve on my facility to find relevant, up to date information that would make the research element of the project more efficient than in previous modules and I determined to avoid the ‘rabbit holing’ that can often consume me. Additionally, my intention was to submit my paper well before the deadline, to avoid the stress of a last-minute hand-in.

So What?

Pinning down the precise nature of my investigation, was harder than anticipated and delayed the planned creation of the artefact by some considerable margin. The subject of ‘imagery’ is very broad and there are a multitude of stimulating ideas for how this might be artfully implemented into my practice, but selecting the topics for consideration, required a narrowing down that was time consuming. For example, I would have liked to have included the impact of imagery present in poetry and mindfulness, along with an exploration of metaphor and analogy and audiation, but the time constraints were such that this was not possible. Additionally, although there are some excellent papers on imagery and singing, in the broader scheme of relevant literature, they are minimal in number (DeSantis et al, 2022). I therefore had to consider grey literature including books, podcasts, lectures and interviews. I also learned from anecdotal evidence and wanted to include this as I consider it relevant and resonant. Essentially, this often made me feel like my study was less academic and I knew that I needed to surrender myself to the notion that, despite a lack of perceived ‘academic’ underpinning, these direct experiences of imagery use in singing, are metaphoric gold.

Using the PETTLEP model was very helpful in providing a methodological framework for the study. Each of the seven points of the model was to be examined in isolation in the following terms; its original context as posited by the authors of the model, Holmes and Collins (2001), examples of in-practice experiences and finally, seeking transferability to singing training. I felt I was mostly successful in adhering to this protocol, however, I struggled to find in-practice examples and felt that I needed more time to consider how these might be implemented, particularly in Timing and Perspective. It also became clear to me that the real value emerging from the literature, was perhaps not so much in devising a protocol for imagery scripts but in the value of imagery use per-se, and how well supported this is, particularly by speech and singing related neuroscience (Moss Erickson, 2025). For example, the processes of speech acquisition in children demonstrates the necessity of using audiation prior to phonation for faster consolidation and longer term retention of musical phrases (Moss-Erickson, 2022). Essentially, in the same way that imagining choreography can innervate muscles, audiation can induce subvocalisation (innervation of laryngeal muscles) to enable the singer to start to feel how to make the necessary vocal tract shaping and allows for the ‘seeing’ of the musical phrase shapes and pitches, in other words, *silent singing* (Moul, 2024). The long-term embedding and consolidation of new neural data (image related, in the case of this

paper) acquired through repetition that is punctuated by periods of sleep and waking rest, is clinically evidenced in neuroplasticity (Paller et al., 2021); this immediately suggests a prosaic pointlessness in repetition without breaks and perhaps highlights the unhelpful repercussions of repeating a task incorrectly (Buch et al., 2021). These examples, although not directly related to PETTLEP are important and have inspired the creation of the *Why Bother?* section in the artefact. I hope the reader will be as excited as I felt by the potential value for their professional practices.

In terms of designing the artefact, although I am comfortable with elements of graphic design, it took several iterations to capture the essence of the project in a way that was playful, practical and alluring. Knowing that The Silent Singer is likely to be read by fellow singing teachers, allowed me to find my voice, not as an academic, but as a 'comrade', deliberately using friendly, colloquial language to make the reading of the booklet easy and accessible to those who might be put off by the dry nature of some academic writing. My guiding principle throughout the design and content phases for The Silent Singer, has been to ask myself what I would have wanted to know, had I not already considered the matter of imagery use as part of my Masters. This was really helpful in governing the output.

Overall, I feel the original remit I set myself was too ambitious and resulted in delays in starting the project and in that sense I did not succeed in my time-keeping goals. I also feel that the number of lectures on academic writing for this module, delivered by the Voice Study Centre was excessive and contributed to a sense of unease about starting the project until I had attended and fully understood all of them. In essence, along with an inordinate number of potential approaches, there was too much content to be considered. However, I do feel that my proposal, even in this somewhat pared-down iteration, could hold value for my students and provide a new perspective to my practice. As I am self-employed and work mostly on a one-to-one basis with singers, I am self-regulating and as such am conscious of the need for continual professional development as assessed by independent academic reviewers. In this sense, the Masters has been very successful.

Now What?

In its current form, the Silent Singer is elucidating in terms of providing information on core imagery concepts, including imagery scripts, but the real value might be in specific problem solving. For example, a teacher struggling to guide their student in reducing nasality might cross-reference 'nasality' and be able to learn about strategies employed by other teachers. This sort of information is dependent on the level of community feedback at the questionnaire stage of Module 6 which is to be constructed around existing examples already used in sports, dance and singing studies. Additionally, I recognise that I need to include examples in the prototype of the kind of information I am seeking from contributors, which will be undertaken in the next phase of development. For example, in respect of the example of nasality, this might be presented in the Task section of PETTLEP under the subheading 'nasality' along with suggested strategies.

As I prepare to submit this paper and consider the development of this study for my next module, I am looking forward to exploring some of the ideas that could not be included, such as the benefits of poetry on developing imagery and how that might have an application in singing. This will be followed by a period of testing of the prototype within the wider singing teaching community, along with soliciting contributions. As I read through the ethical considerations imposed by University of Wales Trinity Saint David, I am beginning to consider the implications of soliciting personal contributions drawn from interactions between students and teachers and also wonder if I should be extending my enquiries to the professional singing community. Overall, I feel that this first iteration of the artefact fulfils my remit and that it will require further consideration of how the end-user will benefit most from its creation.

Part 2

BMPF7013F

The Silent Singer - Building on PETTLEP to devise imagery scripts for singing training

Introduction

There are numerous, rigorous studies across a wide range of physical activities that testify to the benefits of the use of imagery in enhancing motor skills (Janjigian, 2024; Lindsay et al., 2023; Ruffino et al., 2021; Simonsmeier et al, 2021; Spittle, 2021; Toth et al., 2020). Post-injury rehabilitation research also suggests remarkable results from using visualisation protocols (Hilt et al., 2023). Like many other physical activities, singing combines physical, neurological, emotional and psychological phenomena (Madill, 2025); it therefore stands to reason that the practical application of an imagery protocol, such as those used by sport coaches, might have benefits in singing training. Additionally, susceptibilities of the organic, 'living' instrument along with the covert nature of many of the process mechanisms, can make singing particularly challenging to teach, which adds to the urgency of developing protocols to help navigate these phenomena (Moss Erickson, 2025). Moss Erickson highlights that the complex neurological processes of singing means that a 'one-size-fits-all' approach to teaching will likely be ineffective and that learning-strategies must be uniquely structured around the individual's personal needs and circumstances. Sports studies and neuro-scientific research posit that by cultivating imaginative thought, which, by its very nature is a deeply personal and subjective experience, it is possible for individuals to improve motor performance outcomes (Pearson, 2019). The Silent Singer (called the artefact henceforth) is a first iteration of a formalised imagery protocol that is being developed for use by singing teachers. Presented as a digital booklet, the teacher is provided with an introduction to the core concepts of mental imagery, a glossary of terms and proof of efficacy, along with a protocol for devising student-led, personalised imagery scripts. To deliver on this, this first iteration seeks to find transferability from existing academic, clinical and pedagogic research, along with the experiential observations of the author's professional practice. The proposed imagery protocol is constructed around the PETTLEP model, devised by Holmes and Collins (2001). PETTLEP was originally designed to assist sports psychologists in devising imagery scripts for the training of elite athletes and, although scientific developments have now allowed a better understanding of some of the areas of consideration, the model is still widely used in its original form (Janjigian, 2024). Holmes and collins (2001) were influenced by studies that indicated similar neural activity during imagery processes as those experienced in the physical execution of movement, known as *functional equivalence* (Wright et al., 2014). Their model draws on empirical and theoretical evidence garnered from the scientific fields of sports psychology, cognitive psychology and neuroscience that suggests that skill development is expedited with the use of imagery interventions combined with physical practice (Lyndsay et al., 2023; Potter et al., 2005; Smith et al., 2007; Wakefield et al., 2012). PETTLEP is constructed around an acronymic seven point, intervention check list: Physical, Environment, Task, Timing, Learning, Emotion and Perspective. The artefact examines each of these points within the original context and explores potential

transferability to singing. For example, in the section called *Task* a singing teacher working with a student on problematic nasality, might consider asking the student to take a surprised breath or to imagine *smelling a flower* which can activate the soft palate to divert air away from the nasal passages and into the oral cavity (Miller, 2004). The original research presented by Holmes and Collins (2001) is, understandably, steeped in academic and scientific terminology, aimed at sport psychologists and published in niche journals that may feel inaccessible or irrelevant to many teachers of singing (Plavén-Sigray et al., 2017; Thompson et al., 2018). Therefore, the aim of the artefact is to negate these impedances and present singing teachers with a useable and inspiring tool that is written in plain English while still providing academically and scientifically-underpinned explanations for the purposes of reassurance and validation.

Design and content

Please note that the order of contents for this paper is presented as they appear in the artefact.

An introduction to the author

To add authority and positionality to the artefact an introduction to the author, their motivations and qualifications may offer context and reassurance to the reader (Costley et al., 2010). Additionally, as the artefact is to be disseminated among the wider singing teaching community, as opposed to an academic readership, it is hoped that by establishing a more colloquial and inclusive tone, the reader may be more immediately inclined to engage with a fellow singing teacher.

Glossary

A simple glossary of terms is placed before the main body of text to enable an understanding of imagery terms prior to further reading (appendix 3). As the artefact is being developed for use in the professional practice, the author has used a selection criteria that has bias in favour of relevance to singing training along with consideration to the requirements of the PETTLEP model. In other words, this list does not contain all possible definitions of imagery. In addition to the use of attributed direct quotations, many of the definitions draw from Mielke et al.'s (2019) *Glossary and Taxonomy for Mental Practice in Music*, which was developed in response to the lack of uniformity of language to describe imagery types in research papers; the authors assimilated their glossary from the most commonly used-terms relating to mental practice across a broad range of robust academic literature.

Why should singing teachers bother? The argument

The efficacy of imagery use and metal practice in developing motor skills and emotional regulation, particularly in elite sports is well-documented and supported by findings in a variety of disciplines including basketball, weightlifting, golf and darts (Janjigian, 2024; Ladda et al., 2021; Nordin and Cummings, 2005). Studies on the use of motor and mental imagery suggest that a combination of physical practice combined with imagery can lead to effective outcomes, such as longer term motor memory retention, more so than when each is practiced on its own (Ruffino et al., 2021; Simonsmeier et al., 2021; Weinberg, 2008). Essentially, mental practice is a well-supported evidence based technique that can be learned and has benefits for all levels of mastery, from amateur to elite performer and should be incorporated into training (Janjigian, 2024; Ladda et al., 2021). To give a better understanding of how the use of mental imagery can improve skill acquisition, Ruffino et al's (2021) comprehensive speed/accuracy trade-off trial, offers clarity; participants, divided into physical training (PT) and mental imagery training groups (MIT), were required to point a pencil at a series of targets on a screen, in a specific order, as accurately and as fast as possible. After an initial pre-test the mental imagery training group (MIT) were instructed to imagine themselves performing the physical task by seeing the target and imagining their arm moving. Each practiced the task 72-times before being tested in real time. The results of this experiment showed that PT presented only slightly better than the MIT for immediate skill acquisition and when tested again, six-hours post experiment, the MIT revealed a better outcome than the PT, thus suggesting a longer term embedding of skill accuracy for the mental imagery group (Ruffino et al, 2021). This exciting research, which is in itself influenced by several previous studies suggest similar findings, including a studies on lifting weights, which have demonstrated that individuals who committed to a regime of imagining lifting heavier weights were more successful than those who did not use mental imagery (Slimani et al., 2016). These studies indicate that MIT could have benefits for singing training, including evidence of muscle strength and agility improvements (Lebon et al., 2010; Ranganathan et al, 2004). The potential in developing skills without the necessity of producing sound may be useful for vocal health (reducing the temptation to 'over-sing'), improving kinaesthetic awareness, laryngeal stability and agility or for presenting practicing opportunities in conditions that do not allow for sound-making. Evidence suggests that by using imagery in preparation for performance, athletes are not only improving on physical skill levels but are also developing emotional regulation, self-confidence and emotional arousal, all of which are vital in singing and performance (Janjigian, 2024). Associations, such as trigger words, images, gestures or creating stories are key in skill development and repetition of such is vital in consolidating short into long term memory, for example, throwing an imaginary ball downwards when singing high notes, or using breast-stroke arms to feel the voice remaining on one plane as opposed to a more jagged up-down movement (Moss-Erickson, 2025). The artefact will explore these 'triggers' when considering the seven-points of the PETTLEP model. Singing teachers might also consider Imagery for *goal-directed* behaviour, this might include visualising the successful outcome of a performance, which can invoke the necessary physiological and emotional arousal for the performance itself (Paivio, 1985). In other words, if a singer creates an

imagery script that allows them to mentally rehearse the context, environment and success of an upcoming performance, they are likely to be better prepared for the realities of the performance. Many performers will develop visualisation processes quite naturally over time, however, psychophysiological research argues for the benefits of an applied, evidence-based approach with clear actionable and effective frameworks for mental imagery (Janjigian, 2024; Jones et al., 1997).

Why bother? An illustrative page from The Silent Singer



A FRAMEWORK FOR VISUALISATION

PETTLEP

Physical Environment Task Timing Learning Emotion Perspective

The PETTLEP model of visualisation was originally created by Holmes and Collins in 2001 to assist sports psychologists in devising imagery scripts for the training of elite athletes. Holmes and Collins, who drew from across a broad range of scientific fields, posited that skill development is expedited with the use of imagery interventions that are also conceptualised with physical practice. As this model is frequently cited in more contemporary studies and is underpinned by robust research, I have chosen it as a potential framework for visualisation in The Silent Singer.

Holmes and Collins advocate the PETTLEP checklist as minimum requirements, and while some research maintains that omitting elements may compromise the performance, others maintain that the focus must be on the indvidual and what serves them best. Just remember, we are not elite athletes in the sporting sense, but singers who have other considerations, such as the complexities of the auditory / phonatory loop and the nuances of artistry and emotion.

I have taken each of the elements of the PETTLEP model and given a brief description of what each means in its original intention, examples of use and then suggestions for how it might be used in singing training. I am digging into my own practice for these along with pedagogical texts and am hoping that in the next iteration of The Silent Singer there may be lots more contributions from the wider singing community.

The Silent Singer

What to consider before an imagery intervention

“Performers should be using mental imagery to supplement and enhance his or her physical training. Imagery is not a replacement for real-world training, however it is better than no training at all” (Janjigian, 2024, p3)

Holmes and Collins (2001) advocate the PETTLEP checklist as minimum requirements, and while some research maintains that omitting elements may compromise the performance (Ramsey et al. 2010) others maintain that the focus must be on the athlete (or singer in this case) and what serves the individual best (Wakefield and Smith, 2012). An important consideration for implementation is that imagery generation relies on the retrieval of content that the senses have already been exposed to and that a neural process of *forward planning* enables the recreation of movements that have previously been learned (Pearson, 2019). In other words, there must be a point of reference. It is also of the utmost importance to note that imagery can be clinically disruptive to those living with disorders such as post-traumatic stress disorder (PTSD) depression, schizophrenia and Parkinson’s disease, suggesting a need for due consideration before devising image strategies (Holmes et al., 2001; Pearson, 2019; Zeman et al., 2015). Another consideration for any teacher is that not all humans are capable of imagination (a condition called aphantasia) and as such, they might consider testing their students facility for imagination beforehand by using Vividness of Visual Imagery Questionnaire (VVIQ) and Vividness of Movement Imagery Questionnaire (VMIQ), originally designed by psychologist David Marks (1973) and still in use. These forms are well-supported by research and have been used in over 2000 studies to date and are available in the public domain (Janjigian, 2024).

Practice

How often the student should practice imagery, is a difficult question to answer as it depends on the task and the participant’s ability to image along with the intensity of the imagery training (Janjigian, 2024; Simonsmeier et al., 2021). Simonsmeier et al.’s (2021) comprehensive meta-analysis of quantitive studies analysing the impact of mental imagery in sports training, found that session dosage impacts efficacy, with the more sessions being more impactful. Additionally, several of these studies determined that 20-minutes was the optimal time required per session (Driskell et al., 1994; Toth et al., 2020). Evidence of neuroplasticity occurring through repeated thought-processes and actions, suggests that the practising of tasks with intermittent rest and sleep, is more likely to develop automaticity; in other words, once the brain has consolidated a task through rest and repetition, it can retain it more long term ((Debarnot, 2014; Jäncke, 2009;

Johansson, 2011; Madill, 2025; Monany et al, 2022). Simply put, students must practice regularly to improve and must avoid long pauses between sessions.

Consolidation and sleep

There have been numerous studies that attest to the fundamental role of sleep in solidifying and embedding certain types of motor learning, often described as *off-line learning* (Kitago et al., 2013, Paller et al., 2021; Robertson et al., 2004, Walker et al., 2002, 2003). Interestingly, different neural mechanisms are required for motor skill memory consolidation in wakefulness and in sleep; movement execution, such as speed and accuracy, demonstrated in the finger-pointing exercise (Ruffino et al., 2021), are processed during wakefulness and the spatial goals of a motor skill, such as kicking a ball into goal or throwing a dart or even typing, can be developed during specific sleep stages (Moss-Erickson, 2025; Robertson et al., 2012; Ruffino et al., 2021). Sleep dependent, off-line learning is subject to several variables including the type of instruction that the learner has received (implicit versus explicit learning), and what the task itself is (Siengsukon at al., 2009). What seems to be clear is that memory reactivation, through waking-rest and through sleep is vital for the consolidation and ultimately for the process of skill development and retention (Paller et al,. 2021). Additionally, by its very nature, sleep is likely to present in a more conducive, less disruptive, environment for consolidation (Paller et al,. 2021).

What is an imagery script?

An imagery script can be a written or pre-recorded description of an event and is intended to enable a vivid immersive experience (Janjigian, 2024). Being able to respond to the unforeseen incidences of live performance is more likely to be effective if previous due consideration has been given to what these might be; an imagery script appears to serve this purpose well (Janjigian, 2024). Based on imagery scripts used in elite sports, the artefact offers a suggestion for how an imagery script might work in the context of a singing event and presents a detailed imagery script used by Brazilian footballer Ronaldinho for a deeper understanding (Smith et al., 2008).

PETTLEP - The Seven Point Intervention

Physical

Holmes and Collins (2001) posit that the nature of overall physical imagery must be as close as possible to the actual execution of a physical task. The definition of *Physical* within the PETTLEP model involves all the senses, including kinaesthetic and haptic sensations. Remembering that kinaesthetic imagery (physical sensation) is intrinsically tied into motor imagery so any physical perception must, by its very nature, involve motor systems (Pearson, 2019). As singing is multi-sensory, the need for unconscious task-bearing, as opposed to the burden of multi-tasking,

becomes essential to improvement, and efficiency of automaticity derives from being able to 'imagine' the overall task rather than the myriad individual component tasks (Ruffino, 2021). For example, a golfer learning to swing, would acquire the whole-body sensation of holding the club, hitting the ball, twisting their hips and elbows and judging distance and velocity (Frank at al., 2024). It is the sum of these physical parts working together in a goal-directed manner that underpins the *Physical* element of PETTLEP. Holmes and Collins (2001) suggest that the use of visual imagery can be helpful in developing an overall sense of the physicality of an act; taking the example of the golfer, by watching themselves on video in real-time or previous performances, they can assess and perhaps improve on their own performance (Frank et al., 2024). In other words, a singer might benefit from recording and rewatching their lessons, rehearsals and performances. There is evidence to suggest that watching others executing the intended task can be effective along with watching less competent individuals executing the task, which, in one study, was found to be very helpful to the participants in completing the task more successfully (Aoyama et al., 2020; Kawasaki et al, 2018). In-practice observations suggest that singers can make marked improvements by watching video footage of experienced singers in live performance settings and observing postural changes, breathing habits and facial expression. While considering the *Physical* element of PETTLEP, Holmes and Collins (2001) direct the performer's attention to the possible influence of external factors on the overall task, which, for singers, could include elements of costume (for example, high heeled shoes), choreography, playing instruments, holding a microphone or sitting on a stool, perhaps.

Environment

The component of *Environment* in the PETTLEP model refers to the performance environment itself, such as, in the case of singers, a concert hall or theatre, audition room or examination environment. Holmes and Collins (2001) recommend practising in the actual environment or alternatively, the use of images or videos. Studies suggest improved performance with hockey players by placing them on the pitch to undertake their imaging before matches and with gymnasts who develop imagery while standing on a beam (Burbidge et al., 2025). As part of his pre-match set-up, the great England footballer Wayne Rooney, likes to see images of the stadium in which he will be playing, along with knowing the colour of the chosen strip. He imagines himself in that arena wearing his strip while creating a kinaesthetic sense of interaction with other players, along with the physical sensations of the balance and speed required for effective play (fourfourtwo.com/WayneRooney). In the author's own experience, imagining being part of an audience in the performance environment, along with can be very helpful for developing a true mental representation of the performance space.

Task

The TASK component refers to the content of the imagery; for example, an elite tennis player might be focussing on hip rotation during a task when their novice counterpart might be concentrating on

a more basic skill-level task such as looking at the racket head. The task needs to be discussed with the student and tailored to their developmental needs at that time (Holmes and Collins, 2001). In singing, those tasks might include activating the core muscles or elements of posture, managing runs or remembering words. A study by DeSantis et al. (2022) examined how professional singers used imagery for specific tasks; one such singer describes thinking of colatura as blocks of notes that they bounce a ball over, similar in style to a karaoke machine. Natalie Weiss, the Broadway singer, is well-known for her 'Breaking Down the Riffs' videos on Youtube, where she teaches beginners how to sing complicated riffs by visualising the direction of the notes and by assigning sounds, letters and numbers to each. The success of Weiss's approach is remarkable. In the DeSantis study, one singer describes colour-coding sections of music to lend variety to the way in which strophic verses are performed. Another talked about using imagery to take control of their negative thoughts by assigning a character name to it and consigning it to the corner. The pop singer Robbie Williams has recently talked publicly about using a similar strategy for his performance anxiety. DeSantis et al. (2022) concluded that the more advanced a singer becomes, the more the imagery-use is centred on controlling performance anxiety.

In terms of skill acquisition specifically in singing, an examination of how *subvocalisation* can be helpful in identifying laryngeal sensations, could form a part of the PETTLEP task inventory. Subvocalisation is a term often used to describe how we say words inside our heads as we are reading them (Moul, 2024). Studies have demonstrated that subvocalisation activates motor planning areas for speech and, importantly for singers, for planning laryngeal and articulatory movements for the anticipation of a target pitch (Greenspon, 2023; Pfordresher et al., 2013). Essentially, if a singer imagines singing a particular pitch, a representative sensation occurs in the vocal tract. A singer who is struggling to access the higher notes in the range can learn to feel the sensations of the vocal tract raising by, for example, soundlessly creating a complaining sensation in their throat. In the professional practice, imagining a vocalised response to seeing a puppy, can produce the same sensation. This can be practiced soundlessly and, with repetition, the musculature required for pitch elevation can be developed (Wright et al., 2022).

As pitch accuracy and music memory form a vital part of the singer's skill set, tasks centred on *audiation* could be usefully considered. The literature presents a diversity of terms for audiation, including auditory imaging, mind singing and aural imagery, however, collectively they suggest an introspective means of sound generation (Gates, 2021). Research centred on early speech acquisition highlights the essential roles of listening, auditory imaging and repetition (Gordon, 1999; Moss Erickson, 2022). As such, students are asked to listen to a phrase and allow an imprint to remain in their mind's eye. This is repeated several times before the student is asked to imagine the sensations of singing the phrase in the vocal tract (subvocalisation) before attempting to sing the phrase audibly. In-practice observation suggests pitching and rhythm improvements, along with longer-term memory of song being learned. One student Imagined the phrase as a banner being pulled by a plane flying through a blue sky.

Timing

Holmes and Collins (2001) advocate for executing imagery in real time, particularly in sports where success is often time-dependent. A study of elite canoe slalom competitors found a correlation between between the imaged time and the actual completion time, highlighting, perhaps the necessity for real-time visualisation (Macintyre et al., 2007). However, outside of this time-dependent example, perhaps slowing imaging down to correct errors of basic skill, might benefit some individuals. In the case of singing, it is the author's experience that, depending on the task, an initial slow-motion scrutiny can reap benefits. The singer and renowned riff-expert, Natalie Weiss, generally teaches riffs at speed, but breaks them down in bite-size chunks. Although there is some agreement that the learning of rhythm and timing in music should be exact when imaging (Kageyama, 2021), the nature and susceptibilities of the organic, 'living' instrument, along with the covert nature of many of the process mechanisms, can make singing particularly challenging, relative to other instruments (Moss-Erickson, 2025).

Learning

Holmes and Collins (2001) suggest that when a task has been mastered, and the student improves, the imaging needs to be updated. Other research concurs that imaging is constantly evolving with skill and that tasks need to be incrementally harder, which might also improves motivation and self-confidence (Monany et al., 2022; Ruffino et al., 2021). There is evidence to suggest that the effectiveness of motor imagery may decrease as skill complexity increases with considerable improvements occurring in the early stages of learning. Perhaps, therefore, singing teachers should bear this in mind while working with more advanced singers (DeSantis, 2024). Essentially, the magnitude of the effect of motor imagery is higher for novices undertaking simple tasks. A number of studies attribute imagery use as a major differentiating factor between the elite and the novice, with the rigorous system of repetition and practice through the use of mental imagery contributing to the enhanced neuro-processing and motor coordination exhibited by elite athletes (Debarnot, 2014; Meng et al, 2019).

Emotion

Holmes and Collins (2001) were concerned with improving performance in competitive athletes, and as such 'emotion' refers to the mental state induced by the performance itself. They posit that mental imagery preparation before competition should be as realistic as possible to the actual emotions likely to be felt. Other research supports this notion, acknowledging that the instruction to 'relax' before an event, does not lead to more positive outcomes. A realistic accounting of how real-time emotions might manifest should be part of the preparation for any performance; in other words, an acknowledgment (not denial) and acceptance of how the singer might feel under the pressure of performance along with an exploration of how imagery might help in controlling those emotions, will serve the singer well (Juncos, 2022; Kageyama, 2021). Perhaps another

consideration ought to be that singing is, by its very nature, an emotional endeavour, and singers may feel emotionally challenged by the music itself; therefore, a balance is required between the demands of the role or the narrative in a way that does not impede the technical demands of the music or the emotional tolerances of the performer.

Perspective

Perspective pertains to the viewpoint of the performer during imagery; this could be either internal, therefore looking through the eyes of the performer or external, where the the performer sees themselves as though watching themselves on television, perhaps. Although Holmes and Collins (2001) recommend the internalised viewpoint, they also cede that the external perspective has been found to be very effective in certain form-based skills, such as gymnastics. Perspective can only be decided by the athlete (singer) and Holmes and Collins (2001) state that it is crucial to the success of imagery scripts, if the teacher works with the student to develop perspective. There may be occasions where the performer might find it helpful to change perspectives. In the author's professional practice, students are encouraged to ask themselves what their audience is seeing as they perform and to imagine being in the audience. This experience has been observed to highlight the way in which the performance space is used, where to direct the gaze and on-stage relationship dynamics between performers. Essentially, the subject of perspective needs to be discussed wherever imagery strategies are being developed in the studio.

Have your say

As the artefact evolves towards further development in module 6, the long term consideration of drawing from the wider singing teaching community to create an 'almanac' of first-hand experiences of image-use for specific technical, artistic and emotional elements of singing, will begin. *Have your say* will be presented as a self-populating form that can be submitted anonymously to the author and will also provide an opportunity for individuals to create an aide-memoire of their own imagery interventions. Along with the provision for an imagery framework modelled on PETTLEP, the final iteration of the Silent Singer will allow the end-user to search for strategies that have been successfully implemented, for example, a search for 'nasality' might provide inspiration through examples used by other teachers and singers.

Conclusion

In essence, singing is a multi-modal activity that shares characteristics of neurological, physiological, biological and emotional phenomena, with many other physical endeavours, including elite sports. Unlike singing, however, there have been many studies that attest to the efficacy of imagery use in various sports, in order to develop motor skills. These studies on imagery-use not only demonstrate that imagery improves neuro-processing and motor coordination but contributes to emotional regulation and overall performance experiences (Debarnot, 2014;

Meng et al, 2019; Monany et al., 2022; Ruffino et al., 2021). The present study sought to extract value and transferability from the examined literature into singing training, the author's area of professional practice. The ultimate goal being to convert this theoretical knowledge into a practical application (PRAXIS) (Nelson, 2022, after Aristotle). Along with specific, practical examples of imagery use in singing, the Silent Singer provides a visualisation framework for teachers' use, modelled on an existing framework intended originally for training elite athletes in imagery interventions. The chosen framework, PETTLEP, although conceived in 2001, is in current use and is underpinned by clinical and academic research (Holmes and Collins, 2001; Janjigian, 2024). In contrast to the style of the academic literature explored for this study, the artefact is colloquial and colourful, to allow for broad accessibility (Plavén-Sigray et al., 2017; Thompson et al., 2018). This paper has explored the seven-point intervention list of PETTLEP in terms of a) Holmes and Collin's (2001) original intention, examples of use and ideas for transferability to singing and has used the model itself as the research methodology. To give context to the central ideas presented in the artefact, a grounding in imagery types has been provided through the creation of a glossary of commonly used terms. Furthermore, evidence suggests that the use of imagery can be harmful to certain groups of individuals and as such the artefact has ensured that these areas of concern are highlighted, and should be considered before any imagery interventions are applied. As singing-specific evidence of imagery use is limited, this paper has drawn from other fields of physical endeavour. However, the author's arising consideration is that although singing may share many phenomena with certain sports, the neurological processes of the auditory-phonatory system along with the artistic demands of singing, might suggest that a straightforward carbon-copy of imagery use from sports might not sufficiently address the demands of the singer. This lack of direct correlation may present as a current limitation, but it is hoped that the ultimate strength of the Silent Singer model might be in the future experiential contributions from teachers and students alike, which could go some way to furnishing the archives with examples of effective or ineffective strategies specifically for singing.

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Appendix 1: Project Timeline

PROJECT SCHEDULE
Module 5 - BMPF7013F

Project title: The Silent Singer - a framework for a visualisation script
Artefact description: A Template for a Personalised Singer's PETTLEP Script

Start date: 8th January 2025
Draft Submission Date: 12th May 2025
Final submission: 2nd June 2025
February- Reading / researching

Complete artefact by end March
Complete Part 2 - 20th April
Complete Part 1 - 30th April

Task	Details	Start date	Date to be completed	Completed
Module introduction	Live seminar	15th Jan		Yes
Start with Why	Live seminar	22nd Jan		Yes
Simon Sinak's model	Why How and What - notes completed	22nd - x2 days		Yes
Planned programme of study	Live seminar	29th Jan		Yes
Practice Based approaches	Live seminar	5th February		Yes
Reading period	Extracting literature on key areas of imagery alongside building artefact • Mental practice • Pettlep • Building on imagery components of mod 4	3rd Feb	20th March	
Using Kolb's Reflective model	Live seminar	12th February		
Using Nelson's model to evaluate	Live seminar	19th February		
Linking theoretical with practical	Live seminar	26th February		
Artefact workshop	Live seminar	5th March		
Developing artefact	Drawing on this learning	5th March	20th March	
Completion of Part 2	Completing of Part 2	Ongoing	20th April	
Completion of portfolio (part 1)	Completing of Part 1	Ongoing	30th April	
Draft submission			12th May	
Final submission			2nd June	

Appendix 2 - Sample Questionnaire on imagery in dancing

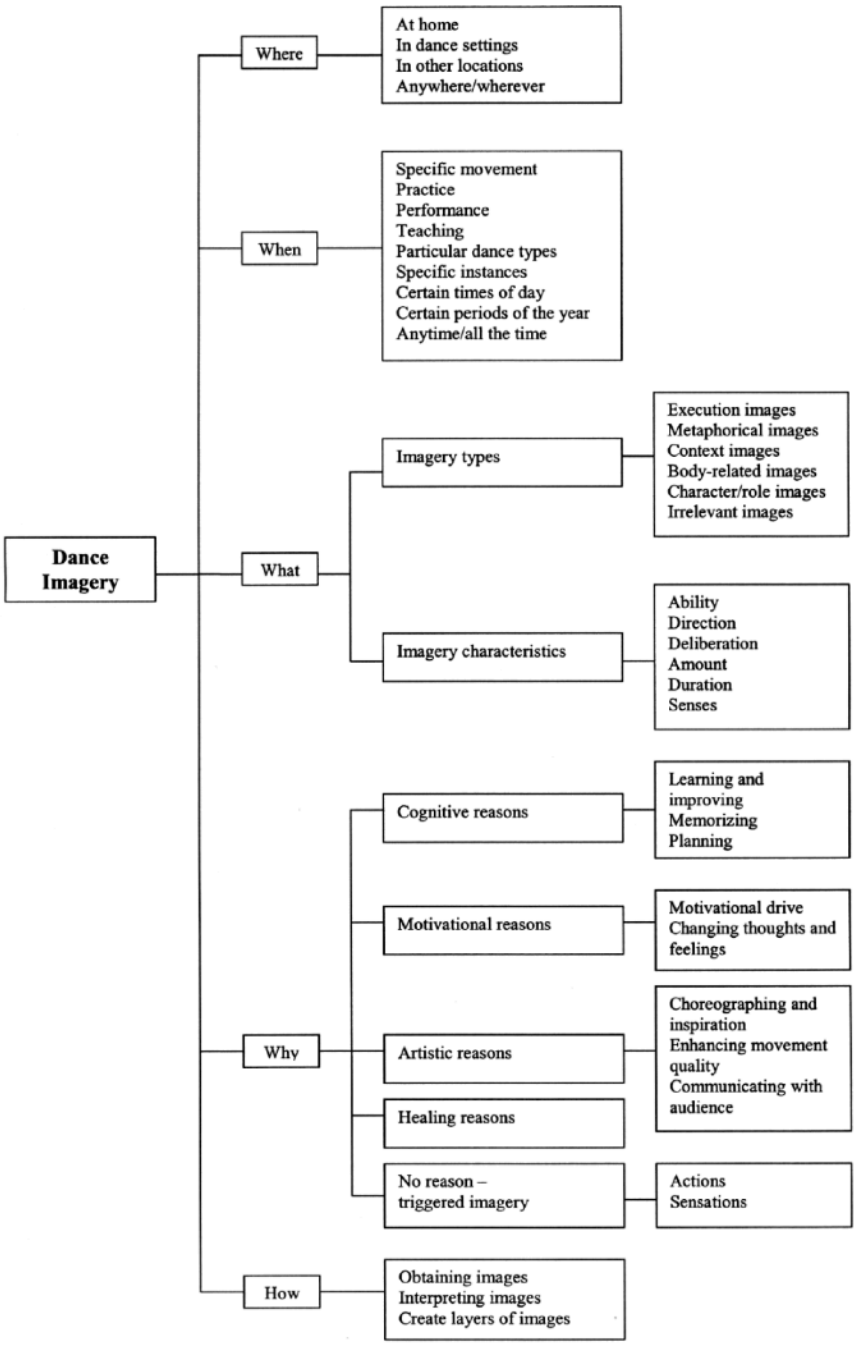


Figure 1 — Hierarchical Tree illustrating the dimensions Where, When, Why, What and How dancers image.

Appendix 3: The Silent Singer - The artefact

A SINGING TEACHER'S HANDBOOK

Prototype

The Silent Singer

Ideas to support and implement the use of imagery in singing training

DISCLOSURE

To my fellow singing teachers,

I have had my mind well and truly blown by some of the things that I have learned about the effectiveness of mental imagery on skill development. If you have never really considered the matter in any depth, I hope that the the Silent Singer might go some way to persuading you of the merits of an imagery framework for your own practice. There is existing literature on mental imagery in singing, however, relative to elite sports, which receives the lion's share of academic, clinical and pedagogic attention, it is woefully underserved. The purpose of The Silent Singer is to to extract potential transferability to singing training from some of this fantastic research and to synthesise it into a useable imagery protocol for teachers. I have drawn mostly from published, peer-reviewed papers on a theme of mental practice and motor imagery with countless excursions down fascinating rabbit holes. The work of influential singing pedagogues has also been a source of inspiration, along with anecdotal conversations and some thought-provoking documentaries and podcasts hosted by individuals with reassuring credentials. I have also included anecdotal and personal experiences of using imagery with my students.

Despite only scratching the surface of this continually-evolving area of study, I am convinced that there are rich pickings here for singing teachers that are worth sharing with each other. As such, I would like to build on what is essentially a pin-prick of information, by reaching out to the wider teaching community for further contributions to the Silent Singer. You can do this by anonymously filling out the form at the end of the booklet that asks you or your student to detail the imagery strategies that you or they use. The collation of this information will form the basis upon which the final iteration of The Silent Singer will be underpinned. Imagine a sort of 'imagery exchange' in the form of a compendium, where we can share and try out our ideas and imagery strategies. It's hard enough being a singing teacher so anything that might relieve the linguistic challenges of having to describe complex and covert phenomena is worth a try.

As I sit here now, in my studio in South East London, preparing to cast my research net out into the wider universe in the hope that something comes back in it, I feel excited and confident that if we can pull this off, we will be rewarded.

Thank you for considering being a part of this project.

Tanya Holt

The Silent Singer forms part of the final dissertation for a Masters Degree in Professional Practice - Vocal Pedagogy through the University of Wales Trinity Saint David and the Voice Study Centre

GLOSSARY

Auditory image

Acoustic mental representations, also called inner singing, audiation, aural imaging. In the same way that you can visualise an object, you can also 'hear' songs or sounds in your head or read a score and hear the musical phrase mentally. A very Important part of speech acquisition in childhood.

Imagery

Mental representations (auditory, kinaesthetic, motor, and/or visual) of objects, events, or movements. It's a broad term and we are all using imagery every day without even thinking about it.

Imagery script

Can be a written or pre-recorded description of an event intended to enable a vivid, immersive experience. Can include a focus on emotional regulation (performance anxiety perhaps), scene setting, skill enhancement, goal setting. Can be devised in first or third person perspective.

Kinaesthetic imagery

Mental representations related to the feeling of movement without actual movement execution: a type of motor imagery.

Mental Practice

A broad term for rehearsing a skill without overt physical movement but it can include visualising the environment where the action takes place, focussing on performance strategy, imagining sounds or sights or reviewing performances and planning future ones. Singers can learn to self-correct by listening to recordings of themselves

Motor imagery

"Motor imagery is defined as the mental simulation of an action without any corresponding motor output" (Ruffino et al., 2021, p1)

Neuroplasticity

The ability of the brain to change and adapt in response to new information throughout someone's life. Essentially, it is constantly evolving both structurally and functionally.

Off-Line Learning

when the brain consolidates and solidifies memories and skills without conscious engagement. This can happen during sleep and waking rest.

Subvocalisation

Describes the internalised speaking of words while reading. Subvocalisation has been shown to activate motor planning areas for speech and singing. Can be useful for singers to subvocalise rehearsals to avoid over-singing or to rehearse in environments where making sound is not possible

Visual imagery

Visual imagery refers to the ability to form mental pictures. Additionally, a person can experience sensory recall by associating a task with a seen image. Visual images can be fully imagined or seen images.

Visualisation

Often used interchangeably with imagery

What Motivates Me?

My interest in the notion of 'mental practice' was initially piqued by the chance reading of an article about a 2004 study undertaken at University College London's Institute of Cognitive Neuroscience. The focus of the study was an examination of brain activity in dancers who imagined their choreography without physically engaging in dancing. The findings revealed that the brain can simulate a pre-learned motor skill without physical movement, thus providing the possibility for silent or static rehearsal for all types of physical activity, along with the potential for remedial strategies for injury. In addition to this neural research, is evidence of muscle activation from imagining a movement, without any overt movement. As a long standing professional singer and dancer at the time, with a well-honed kinaesthetic awareness, this research resonated with my own, albeit, previously unremarked, practice of rehearsing effectively without overt movement. To this day, the sight of a dancer en-pointe sends a reflex to my own toes and I remember exactly how it feels to dance en-pointe. Science has moved on considerably since 2004 and, although research in this complex area is still ongoing, there is solid evidence indicating the importance of using imagery not just to develop motor skills but to prepare for performance, to build self-belief and to talk-down negative thoughts. A conversation about the Silent Singer proposal with my father, an ex-military helicopter test pilot, sparked a surge of enthusiasm as he described the methods he adopted during his long career; sitting in the aircraft simulator, he would create imagery scripts for the sequence of events that needed to be undertaken for all the possible outcomes (he was testing faulty aircraft). Firstly, plotting the events mentally, then physically, leaning into the controls and then he would regularly repeat the physical elements of each event, blindfolded. He did this consistently during his career and despite several major and critical emergencies, survived and is written about in books. He is absolutely certain that he would not have survived had his reactions not been so embedded by the mental practice undertaken. In Bence Nanay's excellent treatise on Mental Imagery, he describes an interview with the widow of French photographer Henri Cartier-Bresson; she told him the story of how, during a long period spent hiding in a shed in the German countryside during the war, Cartier-Bresson dedicated himself to learning to visualise the ocean behind the mountain range that surrounded him and as such, the success of his visualisation allowed him tranquility and freedom in his mind. Dr Joe Dispenza, a triathlete who suffered a catastrophic spin injury when knocked off his bike in competition, 'healed' himself by intense periods of rebuilding motor skills through imagery, and although perhaps in an academic or clinical setting, this claim might raise some eyebrows, the fact remains that he was back in competition only a few months later. His is not a one-off story.

During the course of this research, I found lots of promising studies on the use of mental imagery in physical skill development and I would like to share this one conducted by Ruffino et al (2021) as it is beautifully conceived and easy to imagine; in this comprehensive speed/accuracy trade-off trial, participants were divided into a physical training group (PT) and a mental imagery training group (MIT). They were required to point a pen at a series of targets on a screen, in a specific order, as accurately and as fast as possible. After an initial pre-test to learn what was required, the mental imagery training group (MIT) were instructed to imagine themselves performing the physical task by seeing the target and imagining their arm moving. Each group practiced the task 72-times before being tested in real time. The results of this experiment showed that PT presented only slightly better than the MIT for immediate skill acquisition and when tested again, six-hours post experiment, the MIT revealed a better outcome than the PT, perhaps suggesting a longer term embedding of skill accuracy for the mental imagery group (which is supported in other studies).

If you are new to these ideas, it is worth highlighting that various studies posit that imagery generation relies on the retrieval of content that the senses have already been exposed to. So, in essence, there needs to be context; in the pointing exercise, for example, the participant needs to know what it feels like (kinaesthetic feedback) to lift their arm and point a pen at a target before practicing the act with motor imagery alone. There are also a variety of imagery types: kinaesthetic (which is tied into motor imagery, as demonstrated by the finger pointing), auditory imaging which can include mental processing of a heard sound, the memorising of musical patterns or imagining the sounds while reading the sheet music (preferred to physical practice by the great violinist and composer Fritz Kreisler). Visual imagery forms a huge element of imagery use and can manifest as a 'mind's eye' generation of an image or seeing an image (of any sort) to trigger other senses. Imagine biting into a lemon as you read this and see how your mouth waters as a result!

Singing teachers know only too well, that many of the mechanisms involved in singing are out-of-view which requires us to rely on using words to describe quite complicated concepts. I savour the eureka moments when a metaphor hits the target! None of us will ever really know what goes in someone else's mind, but if it works, give it a name and repeat it a few times with short rests in between, even a few seconds (called micro off-line learning) can make a difference. There is robust evidence to demonstrate that the brain needs time away from the task to consolidate new data. The more I learn about the potential in skill development through imagery-use, in all kinds of training, the more I feel motivated to share my knowledge with my students to encourage them to develop their own imagery vernacular.

Why should singing teachers bother?

Because the nature of singing is predominantly a covert activity, with many mechanistic processes hidden from view, singing teachers have to rely on experimental, metaphoric language to convey abstract ideas, that are not always effective. Instead, students can be guided in developing their own, more meaningful imagery

Because the efficacy of imagery use and metal practice in developing motor skills and emotional regulation, across many physical activities, is well-documented and supported by **ROBUST EVIDENCE** This includes longer term embedding of skills

Because the potential in developing singing skills without the necessity of producing sound may be useful for vocal health (reducing the temptation to 'over-sing'), improving kinaesthetic awareness, laryngeal stability (subvocalisation) and agility, while also presenting practicing opportunities in conditions that do not allow for audible singing

Because evidence suggests that by using imagery in preparation for performance, athletes are not only improving on physical skill levels but are also developing **emotional regulation** and self-confidence. all of which are vital in singing and performance

Because, although many performers will develop visualisation processes quite naturally over time, psychophysiological research argues for the benefits of an applied, evidence-based approach with clear actionable and effective frameworks for mental imagery

Because goal-directed behaviour, such as visualising the successful outcome of a performance, audition or exam, can invoke the necessary physiological and emotional arousal for the event itself.

Because sports studies and neuroscience research posit that by cultivating imaginative thought in individuals, which, by its very nature is a deeply personal and subjective experience, significantly increases the potential for individuals to improve motor performance outcomes

The Silent Singer

WHAT TO CONSIDER BEFORE AN IMAGERY INTERVENTION

"Performers should be using mental imagery to supplement and enhance his or her physical training. Imagery is not a replacement for real-world training, however it is better than no training at all" (Janjigian, 2024)

It is important to note that imagery can be **clinically disruptive** to those living with disorders such as post-traumatic stress disorder (PTSD) depression, schizophrenia and Parkinson's disease, suggesting a need for due consideration before devising image strategies. Additionally, not all humans are capable of imagination (a condition called aphantasia) and as such, teachers might consider testing their students facility for imagination beforehand by using Vividness of Visual Imagery Questionnaire (VVIQ) and Vividness of Movement Imagery Questionnaire (VMIQ). originally designed by psychologist David Marks (1973) and still in use. These forms are well-supported by research and have been used in over 2000 studies to date and are available in the public domain and included in the artefact.

Practice

How often the student should practice imagery, is a difficult question to answer as it depends on the task and the participant's ability to image and the intensity of the imagery training. However, a comprehensive meta-analysis of studies analysing the impact of mental imagery in sports training, found that the more sessions, the more impact. Several studies determined that 20-minutes was the optimal time required per session. Evidence of neuroplasticity (physical changes in the brain) occurring through repeated thought processes and actions, suggests that the practising of tasks with intermittent rest and sleep, is more likely to develop automaticity, in other words, once the brain has consolidated a task through rest and repetition, it can retain it (Moss-Erickson, 2025). Simply put, students must practice regularly, to improve!

Consolidation and sleep

What seems to be clear is that memory reactivation, through waking-rest and through sleep is vital for the consolidation and ultimately for the process of skill development and retention. Short periods of rest during imagery training are likely to be beneficial, even as little as 20-seconds.

What is an Imagery Script?

An imagery script can be a written or a pre-recorded description of an event to enable a vivid emmersive experience. It includes focusing on emotional regulation, scene setting, skill enhancement, goal setting and it can be imagined in first or third person.

The great thing about imagery scripts is that they can be practiced absolutely anywhere and any time, and is not exclusive to the singing training studio.

Here is a terrific illustration of an imagery script used by Brazilian footballer Ronaldinho:

> "When I train, one of the things I concentrate on is creating a mental picture of how best deliver the ball to a teammate, preferably leaving him alone in front of the rival goalkeeper. So what I do, always before a game, always, every night and every day, is try and think up things, imagine plays, which no one else will have thought of, and to do so always bearing in mind the particular strength of each team-mate to whom I am passing the ball. When I construct those plays in my mind I take into account whether one team-mate likes to receive the ball at his feet, or ahead of him; if he is good with his head, and how he prefers to head the ball; if he is stronger on his right or his left foot. That is my job. That is what I do. I imagine the game".

A singer might need to imagine themselves arriving at a performance or examination venue, visualise themselves in the clothing they will be wearing, picturing the examiner or audience, the position of the piano and as many details of the space as possible. They should remind themselves that this is what they have been working so hard towards and that their focus should be on expressing the music not on proving themselves. They will have a well-rehearsed 'checklist' for preparing themselves to sing, which might include breathing strategies to calm the inevitable nerves, vocal tract shaping, emotional setting. Trigger words or imagery to establish the character or role or to reflect the emotional narrative of the song. They might imagine that moment just before they sing, when they make eye contact with the accompanist or conductor. Although this is a rather generalised idea of some of things you might consider for a singers imagery script, there is little doubt that this will help prepare them for the realities and unforeseen incidences of performance. The literature explored for the Silent Singer is emphatic in its reminders that coaches and teachers must guide the individual in creating imagery scripts and not create the script. The imagery is more meaningful when devised by the individual who will be using it.

It is worth mentioning that effective use of imagery does not need to involve the creation of imagery scripts and can be as simple as one goal-directed image, for example in my practice, when singers lower their gaze or lose energy in their faces in the higher ranges (which has been shown to account for under-pitching), I say; "Imagine that the sun's just come out from behind a cloud, now put your face in the warmth of the sunlight" it seems to work very well for sun-starved Brits particularly! Holmes and Collins refer to this as Task learning.

A FRAMEWORK FOR VISUALISATION

PETTLEP

Physical Environment Task Timing Learning Emotion Perspective

The PETTLEP model of visualisation was originally created by Holmes and Collins in 2001 to assist sports psychologists in devising imagery scripts for the training of elite athletes. Holmes and Collins, who drew from across a broad range of scientific fields, posited that skill development is expedited with the use of imagery interventions that are also conceptualised with physical practice. As this model is frequently cited in more contemporary studies and is underpinned by robust research, I have chosen it as a potential framework for visualisation in The Silent Singer.

Holmes and Collins advocate the PETTLEP checklist as minimum requirements, and while some research maintains that omitting elements may compromise the performance, others maintain that the focus must be on the indvidual and what serves them best. Just remember, we are not elite athletes in the sporting sense, but singers who have other considerations, such as the complexities of the auditory / phonatory loop and the nuances of artistry and emotion.

I have taken each of the elements of the PETTLEP model and given a brief description of what each means in its original intention, examples of use and then suggestions for how it might be used in singing training. I am digging into my own practice for these along with pedagogical texts and am hoping that in the next iteration of The Silent Singer there may be lots more contributions from the wider singing community.

The Silent Singer

A FRAMEWORK FOR VISUALISATION

PETTLEP

Physical Environment Task Timing Learning Emotion Perspective

Holmes and Collins posit that the nature of the physical imagery must be as close as possible to the actual execution of a physical task. This includes all the senses, including kinaesthetic and haptic sensations. Remembering that kinaesthetic imagery is intrinsically tied into motor imagery so any physical perception must, by its very nature, involve motor systems. For example a golfer learning to swing, would acquire the whole-body sensation of holding the club, hitting the ball, twisting their hips and elbows and judging distance and velocity; it is the sum of these physical parts working together in a goal-directed manner that underpins Holmes and Collin's Physical element of their model. The use of visual imagery can be helpful in developing an overall sense of the physicality of an act; for example a golfer could watch themselves on video in real-time to assess their own performance, or replay footage of their previous tournaments. In other words, a person can experience sensory recall by associating a task with a seen image, thereby suggesting that visual stimuli can improve performance in certain tasks. There is evidence to suggest that watching others executing the intended task can be effective along with watching less competent individuals execute the task, which, in one study, was found to be very helpful to the participants in executing the task more succesfully.

In singing the overall physical task includes elements of posture, breath control, auditory imaging, vocal tract shaping as well as the artistic elements required for performance. We shall look at these individual components in the section on TASK. Holmes and Collins suggest taking into account external factors, which, for singers, could include wearing elements of costume during lessons (for example, high heeled shoes), considering the implications on the voice of a raked stage, choreography or holding an instrument or props while singing. Being able to respond to the unforeseen incidences of live performance is also more likely to be effective, if previous due consideration has been given.

In my own practice singers are always encouraged to work with their props during lessons and incorporate any moves or choreography. I also find that closing the eyes and focussing on the sensations of particular postures can contribute to embedding the execution of the task. And just like the golfer watching their swing in real-time, singers can experience sensory recall from from watching and listening to their own performances.

A FRAMEWORK FOR VISUALISATION

PETTLEP

Physical Environment Task Timing Learning Emotion Perspective

The component of environment refers to the performance environment, such as, in the case of singers, a concert hall or theatre, audition room or examination environment. Holmes and Collins suggest using photographs or videos as an alternative if practising in the actual environment is not possible. Studies suggest improved performance with hockey players by placing them on the pitch to undertake their imaging before matches and gymnasts developing imagery while standing on a beam.

The great England footballer Wayne Rooney, needs to be able to see images of the stadium in which he will be playing his next match, along with the colour of the chosen strip. He spends time imagining himself in the arena, feeling the sense of interaction with other players along with the physical sensations required for effective play.

In the section on PERSPECTIVE we will look at this in isolation, but I think it is worth mentioning that my students seem to find it useful to imagine seeing themselves in the performance space, in an out-of-body way, rather than experiencing the space, first hand, through their own eyes. I say something along the lines of "ask yourself what your audience is seeing as you perform, be there in the crowd looking yourself". On a more practical level, remembering how to get back-stage and on/off stage should not be underestimated; I have certainly had embarrassing moments of trying to exit the stage via a non-opening drape or similar!

A FRAMEWORK FOR VISUALISATION

PETTLEP

Physical Environment Task Timing Learning Emotion Perspective

The TASK component refers to the content of the imagery. For example, an elite tennis player might be focussing on hip rotation during a task when their novice counterpart might be concentrating on a more basic skill-level task such as looking at the racket head. The task needs to be discussed with the student and tailored to their developmental needs at that time. In singing those tasks might include activating the core muscles or elements of posture, managing runs or remembering words.

An interesting study by DeSantis et al. (2022) looked at how professional singers used imagery for specific tasks; one such singer describes thinking of colatura as blocks of 4 notes that they bounce a ball over, like a karaoke machine. Natalie Weiss, the singer, is well-known for her 'Breaking Down the Riffs' videos on Youtube, where she teaches beginners how to sing complicated riffs by visualising the direction of the notes and by assigning different sounds, as well as numbers to them. In the DeSantis study a singer describes colour-coding sections to lend variety to the way in which strophic verses are performed. Another talked about using imagery to take control of their negative thoughts by assigning a character name to it and consigning it to the corner. Interestingly, the pop singer Robbie Williams has recently talked about using a similar strategy for his nemesis, named Blanche.

When introducing an eleven year old to the notion of twang, which requires narrowing of the pharynx, I used my fingers to illustrate narrowing and I was deeply impressed by how quickly she grasped the concept. "It was easy" she said, "I just imagined I was a flamingo!". The suggestion of narrowing being associated with a flamingo's long neck has now proved effective for other students and is easier to teach than a description of lateral to medial narrowing in the pharynx and how it feels in my own throat. Another young singing student prepping for a big audition was struggling to remember the words to her songs; drawing from my own experiences as a singer I suggested she try using highlighter pens to enable colour visualisation of the forgotten words as they appeared on the printed page (a strategy used by Dame Judi Dench) or to associate objects with similar sounding names, to the forgotten words. Neither of these strategies was effective. Finally, by devising some simple choreography, small steps, weight shifting, hair touching and direction changes, she immediately began to remember the lost words by associating physical movement to the word. A session of silently practising her songs with her choreography resolved the problem entirely and the choreography became increasingly less overt. She is likely to use physical movement as an aide memoire in the future. Well worth the time spent exploring.

The Silent Singer

A FRAMEWORK FOR VISUALISATION

PETTLEP

Physical Environment Task Timing Learning Emotion Perspective

Holmes and Collins advocate for executing imagery in real TIME, particularly in sports where success is often time-dependent. A study of elite canoe-slalom competitors found a correlation between between the imaged time and the actual completion time, highlighting, perhaps the necessity for real-time visualisation. However, outside of this time-dependent example, perhaps slowing imaging down to correct errors of basic skill, might benefit some individuals. In the case of singing, it is my experience that, depending on the task, an initial slow-motion scrutiny can reap benefits; in instances where a student is struggling perhaps with vowel modification, diction or finding the appropriate quality of sound. I appreciate that learning the rhythm and timing in music should be exact when imaging (Kageyama, 2021), but the nature and susceptibilities of the organic, 'living' instrument, that is the voice, along with the covert nature of many of the process mechanisms, can make singing particularly challenging, relative to other instruments. In the event that the singer must dance, the element of real-time rehearsing will become vital.

There is a general sense from the literature that the use of imagery must be as personalised as possible and a 'one-size-fits-all' approach will likely be ineffective. Essentially, learning-strategies must be uniquely structured around the individual's personal needs and circumstances.

A FRAMEWORK FOR VISUALISATION

PETTLEP

Physical Environment Task Timing Learning Emotion Perspective

Holmes and Collins suggest that when a task has been mastered, and the student improves, the imaging needs to be updated. Other research concurs that imaging is constantly evolving with skill and that tasks need to be incrementally harder, which also improves motivation and self-confidence. Interestingly in DeSantis's study on what and why singers use imagery, it was noted that the more experienced the singer, the more the imagery focussed on matters of performance anxiety, rather than technical or performance skill. There is evidence to suggest that effectiveness of motor imagery may decrease as skill complexity increases with considerable improvements occuring in the early stages of learning. Essentially the magnitude of the effect of motor imagery is higher for novices undertaking simple tasks which suggests that the content should be regularly updated to reflect skill development, with more complex skills matching technical developments. A number of studies demonstrate that elite performers often exhibit high-speed efficiency in information-processing and in motor coordination, variously attributed to a rigorous system of repetition and practice through the use of mental imagery and that it is this enhanced neuro-processing and motor coordination that often separate the expert from their novice counterpart. This perhaps highlights the necessity to regularly update the learning and challenge the learner.

The Silent Singer

A FRAMEWORK FOR VISUALISATION

PETTLEP

Physical Environment Task Timing Learning Emotion Perspective

The original Holmes and Collins model was concerned with improving performance in competitive athletes, and EMOTION refers to the mental state induced by the performance itself. They suggest that mental imagery preparation before competition should be as realistic as possible to the actual emotions likley to be felt. Other research supports this notion, acknowledging that the instruction to 'relax' before an event, does not lead to more positive outcomes. A realistic accounting of how real-time emotions might manifest should be part of the preparation for any performance; in other words, an acknowledgment (not denial) and acceptance of how the singer might feel under the pressure of performance and an exploration of how imagery might help in controlling those emotions, will serve the singer well (Kageyama, 2021).

Perhaps another consideration ought to be that singing is, by its very nature an emotional endeavour, and, as such, singers may feel emotionally challenged by the music itself. Finding the balance between the demands of the role or the narrative in a way that does not impede the technical demands or the music or indeed, the emotional tolerances of the performer, requires strategising with the individual.

A FRAMEWORK FOR VISUALISATION

PETTLEP

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PERSPECTIVE refers to the viewpoint of the performer during imagery; this could be either internal, therefore looking through the eyes of the performer or external, where the the performer sees themselves as though watching themselves on TV. Although Holmes and Collins recommend the internalised viewpoint, they also cede that the external perspective has been found to be very effective in certain form-based skills, such as gymnastics. Perspective can only be decided by the athlete and Holmes and Collins state that it is crucial to the success of imagery scripts, if the teacher works with the athlete to develop perspective. We are also told that there may be occasions where the athlete might find it helpful to change perspectives. Essentially, the subject of perspective needs to be discussed wherenever imagery strategies are being developed in the studio.

The Silent Singer

HAVE YOUR SAY

COMING IN MODULE 6

The Silent

Singer

Ideas to support and implement the use of imagery in singing training