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'A study on the male adolescent changing voice'

Contents Page number

1. The Portfolio

Introduction and Rationale 1

Literature Review Process 3

Critical Reflection 6

2. The Assignment 10

References

Appendix 1

Appendix 2

1. The Portfolio

Introduction and Rationale

Singing can be tricky for boys in the midst of their adolescence: when their voices start to change, they may feel like quitting; when singing, they may feel exposed and vulnerable, and if personal insecurities and peer pressure exist, they may think the choir is not worthwhile and not attracting the same recognition of other activities (Demorest, 2000). Experiencing a self-discovery phase, pubertal males start to recognise and appreciate masculine elements and features, adopting role models; in social environments, they relate and identity themselves with their peer group, whose values are shared, often at the expense of their own personal interests; moreover, changes in their physiology and the start of sexual perception, intensify their self-consciousness and a sense of uncertainty and discouragement, as they start recognising their inability to meet their own

expectations, for example, in a performance (White and White, 2001). The male adolescent voice is more vulnerable to abuse and misuse during larynx development; if teachers, educators and choir leaders are informed of this process and know how best to efficiently and healthily support boys with their singing, according to the vocal phase experienced, addressing the right pitch and tessitura, repertoire and beneficial vocal exercises, the potential and longevity of their singing career will be positively influenced (Cooksey, 2000b).

Having presented a study on female adolescence changing voice last year, I would like to carry out a parallel exploration on the male adolescent voice change (MAVC): although the vast majority of my students are female, I believe that my current focus on male adolescent singers is as important. Whilst boys experience puberty, they go through physiological changes which may impact their voices, making then feel more vulnerable to peer perceptions: these factors may considerably influence their inclination to individual singing lessons, live performance and choir participation. As a singing teacher, I share Henwood's (2023) viewpoint: I feel responsible to better understand vocal change in my own students so that they can better navigate this process and feel more motivated to sing; and to increase the quality of teaching supplied and the rate of male participation in my schools' choral programme (Sweet, 2010); perhaps research findings on MAVC can be shared with other choir leaders and music teachers, so that we can work together to solve challenges such as their declining number. My job as a Peripatetic Teacher in 4 secondary schools, involves individual tuition and in very small groups, however, last year, due to the main teacher's prolonged absence in one school, I was asked to step in (and occasionally I still do) and run a mixed choir of 25 students, with only 2 boys participating. Cooksey (1977a) lamented a declining number of males in choirs. Acknowledging the worth of singing as a serious activity, male choir students were taking private lessons (Jorgensen and Pfeiler, 2008): this is important for peripatetic singing teachers like me, because it may increase the current number of male students I teach in one-to-one lessons.

MAVC is an area researched by many, including teachers training their students, medical and clinical professionals and voice and phonetic scientists (Hollien, 2012); it will be hence analysed through a multi-disciplinary approach, drawing on the knowledge from several disciplines, such as vocal pedagogy and music education, laryngeal physiology, paediatrics, speech therapy, and acoustics, mirroring the multifaceted adolescent period, when boys experience physical, physiological, psychological, social and emotional change. An interdisciplinary approach, often used by practitioner-researchers (Winter, 2022), will allow me to gain a broader perspective, better understand and address complex research issues and questions and integrate information. It is important for practitioners, to distinguish gender differences and dissimilarities in cognitive evolution, physical growth and psychological development between male and female adolescents, as well as their different vocal potential, and embody this knowledge (Freer, 2012).

This study endeavours to answer primarily three questions:

- How do male adolescent singing students experience voice change?
- What are the potential challenges and implications for practitioners teaching boys through adolescent voice change?
- How can boys be best supported during their voice mutation, to ensure a rich, lasting and engaging singing experience and participation, whether in individual lessons or choir?

In the past, there have been controversial theories and approaches on how to handle the male adolescent changing voice (Cooksey, 1977b) and this issue is still current as it represents a stimulating yet challenging responsibility for teachers, choir leaders and directors. I currently do not have enough knowledge on this topic, however, it resonates with me, because I feel it is my duty to create an environment of confidence, inspiration, inclusivity and empowerment for my male students, and I hope to achieve this by deepening my investigation.

Planned programme of study

Aims:
- To gain wider knowledge and broad understanding of the male adolescent changing voice
- To explore and further consolidate theoretical knowledge on the topic
- To provide awareness of male singing tuition/choral music in secondary schools and foster vocal development in male adolescents

Objectives:
- To have greater familiarity with the process of male adolescent vocal mutation
- To acknowledge theoretical information through practical implications
- To investigate main issues experienced by both practitioners and male students around singing and vocal development
- To find appropriate strategies supporting boys with vocal change and male identity

<u>Literature Review Process</u>

A stand-alone narrative literature review on MAVC will complement my previous review on female adolescent voice change so that these studies may contribute to provide a more inclusive overview on the changing adolescent voice for both sexes, hence aiming at a more equitable environment in my practice. As my study addresses more than one research questions, choosing a narrative review will allow for a flexible method to find answers, consolidating different information and viewpoints from diverse research studies (Ahmad, 2025). Concentrating on patterns and relationships with a strength that no one single research would have, and imparting an outline of heterogenous and interdisciplinary research subjects (Baumeister and Leary, 1997), a narrative review will shed light on and assess specific topics and bodies of literature while interpreting

findings through creativity and informed assessment (Amobonye et al.,2024). Although lacking in a rigid methodical process and methodological rigour generally implemented in systematic reviews (Ahmad, 2025), and in new ideas and interpretations, the goal will be to gather current understanding available on selected topics as a valuable source of information for teachers, highlighting problems and challenges, and tentatively looking for solutions (Baumeister and Leary, 1997), and to heighten awareness and deepen insight of the principal concepts and issues by discovering relationships including the comprehensive impact of this area of study and its broader context (Werkmeister Rozas and Klein, 2010). As this traditional review will draw on the knowledge gained from different disciplines in order to answer my research questions, embracing the complex and multi-layered nature of the subject (Ahmad, 2025), flexibility of focus will be taken into consideration (Collins and Fauser, 2005), however, it will aim to offer thoughtful and well-designed reasoning and not simply a detailed summary (Cohen, Manion and Morrison, 2018).

This explorative study is essentially qualitative in its approach although it organises methodological diversity (Baumeister and Leary, 1997; Amobonye et al.,2024; Ahmad, 2025), comprising both quantitative and qualitative findings. Cooper's (1985) taxonomy of literature reviews will allow for an initial framework to work on and organise the structure of my research in a feasible way; and improve its organisational quality (Ferrari, 20015). My focus will be mostly narrowed to research findings, including possible solutions and strategies to enhance boys' singing participation and hopefully incorporating singing exercises; my hope is that this review will gather and circulate leading information and provide a valuable resource for teachers' and choir leaders' professional practices (Ahmad, 2025), potentially other scholars within the field, and most of all, for male students experiencing vocal change. The goal will be to identify key issues and critically analyse theories, discovering connections and conflicting perspectives and making comparisons, to familiarise and keep updated with emerging trends and patterns in order to ameliorate my practice, and gain a sense of direction amidst opposing thought-provoking and compelling articles related to theory and real context (Green, Johnson and Adams, 2006). While acquiring and outlining influential studies, organised by a conceptual framework, I will strive to be as neutral as possible, however, narrative reviews being subjective in nature, can lead to bias, also due to selective citation (Ahmad, 2025), to unintentionally ignoring key information or reinforcing my viewpoint (Grant and Booth, 2009), and leading to opportunistic documentation, as they do not need to investigate all related literature, but what is accessible to the researcher (Davies, 2000). Presenting my study as an insider-researcher may also be affected by my own experience and perspectives, making it more vulnerable to subjectivity. With regards to coverage, due to the abundant information available on MAVC, my review will not be exhaustive owing to time constraints and inadequate access to some data, but representative of the main areas of concern.

Despite two years of teaching singing, MAVC was still an unfamiliar topic, so I carried out a preliminary reading exploration of some of the literature: this was valuable because it highlighted the controversy and main challenges I have also come across in my work, before I could raise specific research questions (O'Leary, 2014), which then led me to a more in-depth survey of data

to find solutions, hence guiding the design and conduct of my investigation (Mertens, 2024; Shaw, 2010); a great research study pivots on fine research questions, which in turn entails knowledge of previous research studies and theories (Forrester, 2012). Due to the multifaceted context and theories regarding MAVC, spanning from educational, psychological and social disciplines to more scientific fields involving acoustics and biology, and hinging on the inherent features of my explorative non-systematic investigation, I will not strictly bind my inclusion criteria, I will instead demarcate broader confines. My study will examine male adolescent singing students (gender assigned at birth) yet excluding research on transgender students, as this would necessitate additional investigation, although relevant to be explored in my continued research, to cultivate diversity and feel prepared if I were to work with transgender singers in future. I may though consider younger students in their last stage of primary school, as pubertal onset has been found to occur earlier than in the past, hence having an implication on vocal change, and I may comprise articles related to both sexes regarding biological data. My search will span a wide geographical context, due to an abundant number of key studies originating from America, Europe and the UK, which is ideal since my profession is exposed to international students and cultures. A great deal of articles seem to address choral contexts, and not individual singing lessons, however, information will still be relevant even when regarding mixed gender choral settings, as it may provide guidance on useful teachers' language patterns to help maintain male adolescents' motivation and interest high (Freer, 2008). With regards to timeframes of articles, both older and most recent papers will be taken into account: for example Cooksey's (1977b) categorisation of male voices became (and still is) very influential on following research and practices. A short historical context will introduce the topic, with the aim to trace and familiarise with past key events, before leading the reader towards the latest research (Ahmad, 2025).

Beside accessing the University of Wales Trinity Saint David online library and consulting with the librarian, I also gathered data while browsing scholarly search engines and academic databases such as Google Scholar, PubMed, ResearchGate, Academia Edu, JSTOR, ProQuest, EBSCO, National Library of Medicine; in some instances, I came across some articles through a random but persistent online search, when not available on databases. Giving my priority to peer-reviewed papers and aiming to give an account of primary sources, before accessing secondary sources, I have perused articles in top-quality scholarly journals as well as publications seemingly presenting a more anecdotal character. Browsing the Internet Archive on https://archive.org/ for much older books and Google Books to have a preview of the ones I was not sure whether to buy, has been advantageous. Articles which could only be read either by paying a fee or by being subscribed to a journal, were excluded from my list. A local university library, which I joined free of charge through SCONUL, facilitated an additional bibliography source, to find relevant printed books and gain access to its online catalogue.

Investigating my subject through a multi-pronged approach, I have followed footnote chasing, while navigating back to previous articles listed as references, and citation searching, travelling forward a chain of citations listed in an index to discover related material (Bates, 1989); a related content was

also available in some databases, although not always relevant and tailored to my enquiry (Booth, 2008). Lastly, I aimed to locate and integrate all the studies a few key authors had published, however, the amount of data was far too large for me to handle in such limited time, so even though repeated information was occasionally found, a point of saturation could not be reached.

As well as looking for articles by entering key terms such as “male adolescent” and “changing voice”, which are included in my research title, I elaborated my search by identifying new key terms reported on individual studies, their title or abstract, and refining my strategy using synonyms, adding alternative words and their combinations, testing alternative search strategies such as wildcards and Boolean operators for further variations of the same term (Forrester, 2012; Shaw, 2010), widening my initial key terms to others, for example, “male adolescent vocal change”, “male adolescent voice”, “voice mutation”, “vocal maturation”, “male pubertal voice change”, “phases of pubertal voice mutation”, and discovering a new chain of keywords for other themes I wanted to explore such as “vocal masculinity in male adolescents”, “strategies for male adolescent voices” and “male adolescent vocal identity”. Analysing, synthesising and organising the literature did not follow a sequential process at all times, instead it was overtaken by reading and summarising; yet in order to guide the reader through an abundant supply of data (Punch and Oansea, 2014), I utilised a ‘coding’ framework to group the findings into chief themes, creating links amongst them through an organised pattern of a narrative story; this thematic review facilitated the analysis of the material and gave me the advantage of being able to present a consistent and better organised report (Forrester, 2012).

Critical Reflection

I have undertaken this research study because it underpins the importance of practitioner knowledge, frequently depicted as “knowing how” (Schön, 1987). Hence, I chose to focus my attention on MAVC through a narrative literature review because I observed I had inadequate knowledge and insufficient expertise. I felt inexperienced even more so compared to how I felt before I started my study on female adolescent vocal change two years ago, as boys represent a minority of all my students, making me feel very unfamiliar towards their vocal, emotional and educational needs. However, my desire to improve my teaching practice, foster an inclusive workplace, provide a welcoming and respectful environment where all students have equal access to singing opportunities, and can feel appreciated, valued and heard, supports this study.

After an initial glance at the material available online, I felt overwhelmed at the amount of information available and I knew that, due to time constraints, I would never have been able to engage in a deeper and nuanced analysis as the topic is quite broad and can be framed and investigated through multiple lenses and perspectives, from the acoustic or physiological angle to to the social-emotional elements of male adolescents’ needs, from teachers’ perceptions and practices’ implications to school and curriculum expectations, all significant and noteworthy facets of a complex issue. Even though my quest for information was guided by my research questions,

which directed the focus and breadth of my reading and helped me with data selection, I noticed that a sense of anxiety was still lingering even when I started identifying common themes and organising information, because even though I had more clarity whilst I identified patterns and trends across different sources, I thought that the landscape of data was too wild to be tamed, as much information was still left uncovered. Selecting the most significant articles from a vast pool of studies was very challenging, although sometimes their abstract (or summary) helped me to decide their relevance (Forrester, 2012); in some cases, articles did not provide direct citations for scientific papers but vaguely referred to the implied authors and given topic as being suggested by science. The process of theme clusters throughout my study streamlined my working method in a systematic way, but it also felt like a 'creative act' (Forrester, 2012, p.23). I strategically approached a considerable body of information, making a list of every article I read in alphabetical order (author's name), adding the title, country of origin, if it was choir, cathedral or school related, typing some notes about the content and salient information, hence simplifying and keeping a record of information perused (David and Sutton, 2011), and I highlighted the main themes using colours, in order to code the data with more ease. I also attempted to draw a conceptual mapping of the findings for a clearer overview (Forrester, 2012), but as I did that by hand and the data increased, it became too untidy to keep working on it. Even though time-consuming, I believe that conducting a broad thematic review has been the right choice, not only because I delved into many encompassing related areas of a multifaceted topic to develop an overall understanding of the main issues, but also because by gaining deeper knowledge, expertise and developing my ability as a researcher, I discovered a sense of empowerment. Perhaps in my next project, I could narrow my focus further, for examples restricting to UK literature only or examine a single theme, but in this case, I think it was important to keep its context broad-ranging, and discuss pivotal world-wide research, past and current.

Male adolescent vocal identity has been a very engrossing topic to learn about. Sweet (2010) states that boys may be afraid of being mocked and judged both by choir and non-choir boys, out of jealousy from other peers, due to competition of skills and opportunities not embraced, towards female attention, or on their voice ability and classification, on being able to sing in a higher range, and compared to boys whose voice has already reached a deeper range: I also have witnessed this fear and anxiety in my own students. I firmly agree with Philips (2003) that one important aspect of a singing teacher/choir leader's role is to create a safe environment for all concerned, where young students can be free to express and explore their voices, and any mockery from classmates should be promptly addressed and rejected; he believes that more ease and safety is usually achieved through individual singing lessons rather than larger choirs where boys feel more at risk of being ridiculed, and although I have found this to be true, I also noticed a peculiar behaviour from my students, which led me to sense that they still fear being judged by their peers about having one-to-one singing lessons. For example, while I was accompanying a pair of students to the piano room to start our lesson, they were stopped in the corridor by a couple of wandering boys and were asked where they were heading to: my students replied they were making their way to their "music" lesson (as if hiding they were singers); on another occasion, as

they were about to sing, they closed the windows despite being a very hot day, when they noticed their peers standing in the nearby courtyard during break-time; another time, they also disclosed that they would never perform at a school recital if “the other boys were there”, which is unfortunate because they have always shown full engagement and commitment to singing in my presence. I occasionally observed another student of mine, who used to sing with the Lion King musical’s cast, checking through the room’s door glass panel and moving to a corner hidden from view, whenever his peers were walking by: I perceived he did not want to be spotted or heard singing; moreover, when his lessons were moved to a time overlapping with detention, and misbehaving students were held back at school sitting in silence in a big hall next to where I teach, he told me that he could not sing due to sore throat, not feeling well, belly ache: these could have been all valid reasons, however, when his lessons were moved back to an earlier time, he sang without hesitation. Boys may feel more prone to live behind their childish memories of primary choir participation in favour of solo singing or small band (Ashley, 2013), which in my professional context, could translate to having a higher number of boys in my one-to one singing lessons; regrettably, this is not the case: so far I have experienced working with a tiny minority of male singers and witnessed a minimal amount in a choir context, so I think negative stereotypes at school may all be barriers contributing to discourage my students from singing.

Guided by Schön (1983; 1987), I took the opportunity to engage in critical reflection, attained through both *reflection-on-action* and *in-action,* which has benefited my thinking and my practice, and expanded the need to continuous learning, awareness and ongoing professional development. While *reflecting-on-action*, I realised that I needed to start talking more directly and frequently about vocal change to all my students and share what I had learnt, implement strategies and ask for their feedback: this had not occurred beforehand as the subject was very unfamiliar and I felt like an emerging professional with limited experience, like when I heard the only two singing boys in a mixed choir randomly switching their range to different octaves and being disoriented (Jorgensen and Pfeiler, 2008) and I did not do much to address this issue. Reviewing and reflecting on my work and situations that I had witnessed, I considered past mistakes as stepping stones for growth and improvement. Therefore, I became more pro-active and involved all students in an individual conversation about vocal change, making an effort to connect and encourage them, promoting awareness and the uniqueness of each voice (and being careful not to label them during a transitional voice mutation); I also integrated new approaches to warm-up exercises and asked their response regarding ease and comfort. When a new single student asked me to be paired with another boy in lesson, I liaised with the Head of Music, advocating the importance of male camaraderie and peer inter-relating (Freer, 2012). I let them handle a small object to periodically shift their attention during lesson (Freer, 2007), instead of reproaching them for being out of focus. As I navigated through this process, and further evaluated the effectiveness of interventions, preparing for new opportunities and future actions, I felt more confident within myself and in my role as a singing teacher.

Using reflection-in-action, I was able to adjust my lessons in the moment, according to each student and his different needs, dynamically working by trial and error, learning from uncertainties and doubts. I was often required to immediately act through strategic thinking, swiftly drawing ideas from immediate sources, through unexpected, spontaneous events, caught by a feeling of surprise, which directly connected me to 'action-present' (Schön, 1987, p. 26). This happened for instance when I brought my knowledge of jazz improvisation into play at a favourable time, noticing that one student was struggling with limited vocal range, hence I was able to 'integrate reflection-in-action into the smooth performance of an ongoing task' (Schön, 1987, p. 29). With changing adolescent voices, Freer (2009b) recommends improvisation as strategy for choral warm-ups, but I instinctively allowed it also in songs, to empower and enable my students to be more at ease with their range, by experimenting and reshaping the melody, making new sense of a song. Being a jazz vocalist, it was great to partake this skill with my students, engaging 'into experiences of thinking and doing that everyone shares' (Schön, 1987, p. 32). I was also involved in reflection-in-action whenever students came to me with specific sudden requests, when I had to creatively frame new approaches to vocal technique on the spot, or address and supportively guide their concern about their vocal status, developing my empathy skills. Having learnt about the benefit of physical movement, quick instructions, and rhythmic repertoire in rehearsals (Freer, 2012), the use of body movement when learning (Freer, 2007) and moving activities when vocalising above the break to possibly retain a high voice (Leck, 2009), I started experimenting and broadening my teaching approach: for example, one day, as a couple of boys were singing a lively song, I spontaneously engaged in clapping and in a light dance, which encouraged them to join me and express more creatively through movement and song. Reflecting on previous reflection-in-action helped in creating subsequent action, increasing the effectiveness of my artistry of professional practice.

Another practical and essential tool I employed for reflection, is Borton's (1970) model focusing on 3 questions - What? So what? Now what? - which has helped me to pause and contemplate my experience, hopefully transforming it into a valuable service with lasting impact. I conducted an explorative study on MAVC in order to improve both my practice and support offered to my male students. I started reviewing my teaching approach first of all by frequently and more directly discussing vocal change with them, highlighting the importance of individuality in their voice, development and expression, expanding the choice of repertoire and the use of improvisation. I feel that by being pro-active and more confident in my work, my students' seemed to behave with more ease, and showing an increased desire and stronger dedication to train their changing voice, which definitely improved their lesson attendance and behaviour (although my insider-researcher observations may be susceptible to bias and assumptions). I have become more aware of the complexities of teaching as well as of the requirement for teachers to have a more active role within the debate about the needs of male singing students/choristers, in all phases (Freer, 2007), if I am to fully support them with their vocal development. I realise that I will need some time to assimilate what I have learnt through my study and reflection, and fully integrate it into my practice, but having recognised a need to liaise with other teachers/leaders and especially the Heads of

Music in the schools where I am working, I hope that I will soon be able to share not only my professional learning, but also to portray the situational experiences of our students, perhaps to work together to resolve pressing challenges such as the decreasing number of male singers, and male vocal identity in schools, in order to foster a sense of school community. By promoting adolescent vocal change as a relevant topic for all students, knowledge could be delivered as part of an interdisciplinary curriculum, combining science and music, for example by showing a model of the larynx, videos of vocal folds movement and sound production (Philip, 2003); in Y7 when science teachers explain the reproductive cycle and puberty's anatomy, vocal change could also be mentioned. Through a collaborative effort by all parties to cultivate a safe, inclusive, understanding and supportive school environment, boys may have further opportunities to express their potential and feel free to sing once again.

Even though my study indicated contrasting findings on how to approach vocal change in adolescents, and the confusion between theory and practice did not lead to a firm conclusion, which can often happen in narrative literature reviews (Davies, 2000) where findings may not fully answer the research questions nor provide definite answers, implying less pressure in proposing positive conclusions (Amobonye et al., 2024), I personally feel empowered as I have deepened my professional knowledge, stepping outside my comfort zone, and I have become more resilient, embracing challenges and building more self-assurance as a Peripatetic singing teacher.

2. The Assignment

' A study on the male adolescent changing voice'

Introduction

Music practitioners have been deeply engrossed in vocal change during adolescence, a shifting phase when boys, through self-doubt, may develop their vocal identity and imagine future selves as choral musicians/singers, provided that teachers directly address their needs and implement strategies for their musical goals' realisation (Freer, 2010b). Researchers have put forward different stages of voice transition, and voice pedagogues have been trying to tackle a decline in male singing since the 1930s (Gates, 1989). The aim of this study is to discover how male adolescent singers experience vocal change, the potential implications for teachers, and possible strategies to attract and retain boys in singing activities. A brief historical context will follow.

Historical background

In the past, contrasting theories emerged whether male adolescent singers had to rest their developing voice as against continuing singing. Whereas castration, to keep young boys' treble voices, was widespread in Italian church music and opera, the latter resulting in the popular

castrato role (Fisher 2009), giving rise to approximately 70% castrati amongst European operatic singers during the Baroque era (Hollien, 2012), it was common practice not to train the pubertal male voice due to the uneasiness of engendering damage, possibly due to a lack of deep understanding of voice function (Weinrich et al., 2022). In the late 19th century, the advantages and disadvantages of training boys' voices were debated, provoking a contention between pedagogue Manuel Garcia, advocating singing interruption, and pioneering laryngologist Morell Mackenzie, favouring careful training (Fisher 2009). Behnke and Browne (1880) reported the ongoing debate, recommending pubertal boys with evident voice change to stop singing. Since the 1940s, American boys in choral groups provided entertainment, however, since the 1920s, music was expected to be sung as written, so if not fitting and singing specific vocal score parts (SABT) or hymns, art and folk songs' melodies only found in soprano parts, boys became excluded during vocal change; in Europe, the Vienna Boys' were forced to drop out of choir during vocal mutation (Swanson, 1984); in England, boys in church and choirs had to pause their singing, however, the theory promoting male singing throughout voice mutation started to take hold by the mid-twentieth century (Fisher 2009). Due to information relying on anecdotes and observations, disagreement persisted between the two main contrasting approaches: American and UK traditionalist church choirs advocating voice-break, and public schools wanting to address vocal development. This changed with the acknowledgment that a more scientific approach and interdisciplinary collaboration was needed to find solutions to issues experienced by male adolescents (Cooksey, 2000a).

Approaches to supporting male adolescent voices

Disagreement amongst voice pedagogues regarding boys' singing through vocal change persists in the underlying dichotomy between skilful performance versus their voices' vulnerability: Skelton (2007) identifies a gap in scientific literature on the physiological vocal development in young singers, especially pre-pubertal, and concerning the impact of vocal training (versus none), which may shed light on the debate. Two main schools of thought assessing the different phases of MAVC can be defined: the "limited range" developed by Cooper and further developed by Cooksey's landmark study, asserting that boys' voices change predictably and gradually, and the "extended range" originated by Swanson and advocated by Leck and Philips, maintaining that they may develop gradually or quickly and not limited to a narrow range (Williams, Welch and Howard, 2021). Cooksey (1977b; 2000b) centred on allowing male adolescents to keep singing during their voice development and presented 5 guidelines or stages to identify male adolescent voice development (APPENDIX 1). These phases of voice transformation following prepubescent unchanged voice, have been referred as: early mutation, high mutation, mutation climax, stabilising post-mutation and developing post-mutation; even though occurring in a predictable sequence for boys, usually within 1 or 2 years, (between 12.5 and 14 years of age being the most dynamic stage of change), the onset and duration of each stage are individual, with inconsistencies (Cooksey, 2000b) and different variants in each steady progression of patterns (Cooksey, 1977b). Cooksey (1977c) provides a holistic approach to training male adolescents within the complex choir context.

Singing pitch range is the most valid factor to recognise the phases of transformation (Cooksey, 2000b), although signs of early onset of voice mutation (breathiness, loss of higher pitches) are often overlooked whilst in-depth regard is given to the core phase of change (Cooksey, 1977b). A group classification is useful to inspire respect for each voice category's qualities and group solidarity, and each boy's voice development should be classified and explained to enable him to follow his own progress and notify any change to teachers (Cooksey 2000b), and the main aspects of voice mutation imparted, to better integrate individual abilities, limitations and upcoming potential into his school life (Cooksey, 1977b). Instructing boys on their future voice transformation beforehand is paramount to reduce feelings of incompetence and hopelessness and to focus instead on expression and vocal efficiency so that they may keep their interest and passion for singing through vocal change (Cooksey 2000b); Skelton (2007) agrees that education and safe guidance prior the pubertal phase can assist boys' voices in keeping stable. The 1977-1980 Cooksey, Beckett and Wiseman's investigation (cit. in Cooksey 2000a) found that vocal training had no adverse effects on boys' voices, and it might have helped participants in widening their tessitura limits through healthy and adequate vocal management; training may also assist with strengthening pitch range, vocal quality and registers' coordination (Cooksey, 2000b); small groups training experiences within large choirs are recommended (Cooksey, 1977c). Philips (2003) asserts that children easily maintaining their entire use of voice, end up singing more healthily. Crucial to the maturing of the new voice, Leck (2009) also advocates for treble choristers to continue training their high range through vocal change even when their voice becomes more established, although singing high notes may temporarily involve vocal fatigue and some instability, and boys may resist high pitches because they deem it as unmanly. Beynon-Martinec's (2019) W*hole Voice Approach* aims to train pubertal boys to maintain their head voice and upper register while accessing the emerging baritone register at once; her case study of a boy's vocal training, indicated better tone, increased vocal range and a demanding repertoire with no negative impact on his vocal health, although further research on the physiological implications is needed. Williams, Welch and Howard (2021) believe that boys can sing in their treble voice during the early part of their vocal change but at some point they should sing in their lowest comfortable range, since evidence documents a decreased singing efficiency even when in the presence of a seemingly comfortable perceived phonation, hence they would be less liable to potential voice loss and injury due to cumulative stress; they advise teachers to be guided by the Cooksey's system instead of the extended school for a safe vocal transition until new research is established, whilst more experienced choristers equipped with a wider pitch range may still exercise it for a longer period but carefully guided on when it is no longer safe. Cooper's "cambiata" concept may be more suitable in standard schools for its practicality, whereas the "extended" concept may be more relevant in skilled environments such as cathedral choirs (Ashley, 2014 cited in Williams, Welch and Howard, 2021, p. 582).

<u>MAVC research post-Cooksey</u>

Cooksey's seminal work on voice stages classification influenced further research.

Freer's (2016) findings on the current impact since Cooksey' 1992-94 research at the same London Oratory School revealed there was no awareness of his research and boys, feeling unsupported in their scant knowledge about the changing voice, drifted to other activities, also due to choir timetables clashing with sports; policy of the Schola details that treble students experiencing voice change quit the choir until their voice settles whilst some abandon it for good, with only those with gradual vocal change, continuing to sing; boys repeatedly expressed a desire to learn vocal techniques and vocal anatomy and physiology to be more self-aware. Ashley's (2013) research on schools' pedagogical applications similarly investigated Cooksey's work impact in choirs and found that thriving schools offered boys single-sex singing activities, in times not conflicting with sports, included singing as part of the KS3 curriculum and used a suitable singing range (Cooksey 1-3), although in state-maintained schools (compared to independent) there was a lack of the vocal treble line; at times, it was the efforts of charismatic and empathetic teachers, having an attentive ear towards boys' vocal challenges and willingness to go beyond any obstacles, providing part singing when no publications could be found and being inclusive of boys in their early stages of vocal change, which acted as a driving force towards a successful outcome. Fisher (2014) revealed that increased years of choir participation had a positive effect on students' singing self-efficacy and voice change did not impact on it, hinting that teaching and choir's environment may potentially have a direct influence. Ashley (2018) analysed samples of choristers singing songs from "Emerging Voices" (compositions with suitable vocal parts for changing male voices, including Cooper's "cambiata" system) and investigated satisfactory part matches, asking whether a unique vocal timbre typical of a mid-stage of vocal change could be distinguished from both unchanged and baritone timbres, and found it only in flexible choristers with the most experience obtained as treble, and for those with less experience, appropriate, satisfying cambiata tones could be attained. Instead, Fisher, Summitt and Koziel (2021) identified that young singers with unchanged voices were predominantly allocated conventional male vocal parts (bass/tenor/ baritone), disregarding their individual vocal phase, instead prioritising the choral ensemble needs. A requirement for choral practitioners to periodically adjust vocal parts and arrangements, was confirmed by Weinrich et al. (2022), who observed increased pitch breaks and pronounced breathiness in voices ranked as Cooksey stage 4.

Pubertal biological development and adolescent vocal change

Through puberty, male adolescents' larynx, vocal folds and vocal tract grow and change dimensions in a cyclical stage of growth and stabilisation, affecting vocal pitch and intensity as well sound quality; while the laryngeal structure starts developing in size, mass and weight, the pre-pubertal brain programs may keep its usual vocal pattern producing an unexpected voice 'crack' or 'break', a temporary result of an unsteady and misadjusted coordination, however, these terms discouragingly describe this sudden shift between different voice registers (Cooksey, 2000b). Williams, Welch and Howard (2021) hypothesise that boys experiencing a sudden and fast larynx growth, when muscle length and strength become inharmonious, are temporarily less skilled in vocal coordination, and decreased vocal pitch-range halfway through puberty may be a direct

consequence. No evidence shows that vocal training impacts the growth of larynx and vocal tract (Cooksey, 2000b). Harries et al.'s (1997) examined the correlation between the speaking and singing voice characteristics of boys and their pubertal biological development, comparing and establishing a valid relation between Tanner 's (1962) stages with the Cooksey stages and corroborating Cooksey's voice classification as a reliable method to monitor trends, and denoting maximum vocal change at a later phase in male puberty; Harries et al. (1998) hinted that despite the pitch of the speaking voice is mostly determined by vocal fold length, the pitch drop detected in boys aged approximately 13-14 years old (Tanner stage 3 and 4) is mainly because of the enlarged vocal fold mass. Age at male voice break is seldom employed as a clinical indicator for age at pubertal onset, as it is usually a late pubertal event (Juul et al., 2017) and although chronological age is not a definitive factor for anticipating a particular change in vocal and physiological development (Cooksey, 2000a), and an unreliable contributor to voice stage classification (the London Oratory School studies,1992-94, cit. in Cooksey, 2000a), several studies observed pubertal events (genital growth, pubic hair, change in height and weight) and corresponding age. The 1977-1980 Cooksey, Beckett and Wiseman's investigation (cit. in Cooksey 2000a) determined that although the most substantial fluctuation in vocal maturation occurred between 12.5 and 14 years of age, reflecting the patterns of adolescent growth phases reported by Tanner (1962), the pubertal decreasing frequency range occurred before 12-13 years old. Looking at previous studies to develop a model for adolescent vocal change (AVC) detailing its initiation, duration and completion, Hollien (2012) AVC echoed its most common range being 12.5-14.5 years, although its maximum range being 10.5-16.5 years of age; it can last just over 3 years but the mean duration was 18 months. In the mid-18th century in Austria, male voice change was approximately evaluated to occur around 18 years of age (Daw, 1970). Juul et al. (2017) identified a descending trend in timing at voice break between 1994-2003 in Denmark, with 14 years the median age. Lee (1980) observed that in the USA, male puberty may start from age 9.7 and following the beginning of genital growth, and pubic hair approximately 6 months later, the first break in voice pitch was observed around a year later, and a more established voice change followed after two years; puberty in males was experienced 6-12 months later than in females; findings are similar to a previous UK study (Marshall and Tanner, 1970). Boys having a high pre-pubertal body mass index may be more susceptible to have voice break at an early age (Daw, 1970; Ong et al., 2012). Bogaert (2005) explored a connection between the absence of a father (but not related to a mother) and the early pubertal onset for both sexes, pointing to how psychosocial circumstances may influence adolescent growth and development. Killian and Wayman's (2010a) confirmed voice change starting at an earlier age and year group than historically researched, whereas the speaking voice could still be identified approximately 3-4 semitones above the lowest sung pitches. Ashley and Mecke (2013) argued instead that findings and range of methods are too inconsistent to confirm a specific earlier voice change onset, and they remarked, Ong et al. (2012) agreeing too, that evaluating boys' pubertal timing is awkward and invasive to measure.

<u>Male choir and singing participation</u>

For a few centuries, boys' treble voices were an important feature of Western sacred music performed in churches, and this tradition later extended into schools until the late 20th century when boys' attendance waned (whilst female presence increased); more recently, choral establishments are now reaching out to entice young boys and suggesting diverse repertoire; some cathedrals have also widened choir participation to girls (Ashley, 2006). Music educators are concerned about the smaller number of male adolescents joining school choirs, compared to their female counterpart; students' disillusionment is due to their psychological and physiological evolution, their insights into music and singing from a sociological perspective, and unsuitable choral literature and instructions: teachers' awareness and action are key to maintain boys' enjoyment in singing (White and White, 2001), and to transform their developing vocal potential into a skilful ability (Thurman, 2012). In the next section male vocal identity and recommendations to attract and retain male choristers will be dealt with.

Male vocal identity

During puberty, boys can find singing challenging, as their voice becomes unreliable and difficult to handle (Ashley, 2013) and they are exposed to a transitory phase marked by a gender linked disruption of identity confidence (Ashley 2010). American male choral students often disengage from singing at around age 13 when moving schools, unless singing is already integral part of their cultural exposure, if not, they are more prone to quit; those who stop singing during their vocal change, are less liable to resume it at a later time, so it is important for both school practitioners to liaise and maintain relationships to smoothly guide them through the transition, ensuring a successful choristers retention; this also creates a safe space, minimising their exposure to bullying or ridicule by those judging choirs as feminine pursuits (Freer, 2012). It is less difficult to keep boys engaged in their singing than to persuade them to start when their voice has already begun to change (Freer, 2022). Male adolescents may fear being criticised or ridiculed both by choir and non-choir boys for several reasons (Sweet, 2010). Ashley (2013) found that male students do not want to sing in the same high range of girls and be compared to them. Boys may try to lower their speaking voice to sound masculine during vocal change, and in the long run, this may impact the optimum acoustic and physical synergy in their singing (Cooksey, 2000b). However, Ashley (2006) explored masculinity of UK treble boys as a social construct regarding performances in their unchanged voice and found their reluctance of singing high and vulnerability of being mocked by their peers for being girlish may be prompted by adult and teachers' expectations. In American society where singing may be regarded as a feminine practice and boys exposed to judgement and derision (Phillips, 2003), generalisations may easily occur in schools, and teachers may not be aware of being part of this process, whereas they can instead play a crucial role in breaking down stereotypical assumptions: to reach a more inclusive and bias-free approach towards male choristers and appeal and recruit new members, old assumptions about the male ideal exemplar and heteronormative expectations regarding the concept of masculinity

must be discarded (Palkki, 2015). Addressing a clash of contrasting ideological beliefs on acceptable boyhood identity, on how boys should be and how they really are, Ashley (2010) affirmed that in a social context, “real boys” is a construct hinging on the concept of hegemonic masculinity whereas ‘real boys are individuals who need to be understood’ (Ashley, 2010, p. 57). Kennedy’s (2004) study, despite highlighting the chorister’s individual experience of vocal change, described a shared theme of vocal knowledge, musical training, awareness of registers, breathing, and singing techniques, as boys’ confidence had been nurtured and supported during voice transition by music staff, through sensitive guidance towards embarrassing vocal difficulties, yet with humour and a lighthearted, carefree approach.

Promoting boys’ singing participation and strategies for choristers’ retention

Having an inclusive and diverse approach to promote boys’ choirs and recruit new young male choristers is key to fight any stereotypes and put across that singing is an activity that all types of men can achieve (Palkki, 2015). To increase young choristers’ attendance, young adolescents co-created an interactive digital book, to convey information regarding boys’ physical growth and vocal development, and champion singing as appropriate for boys as any other activity (Ashley, 2010). Phillips (2003) maintains that information about MAVC should be conveyed to students before it happens so that they are prepared and remain motivated. To decrease masculinity stereotypes in male choirs, a balance approach is recommended by choosing up-tempo and slower songs, serious and cheerful repertoire, limiting choir texts emphasising gender stereotypes, strong and delicate topics representing a whole gamut of masculinities (Palkki, 2015) and appealing lyrics reflecting real-life scenarios as well as exciting and energetic music (Freer, 2007); for songs to be relatable to boys’ lives in a mixed choir context, repertoire must be of interest to both sexes (Freer, 2012). Teachers’ language should include a wide range of examples so that singing is not compared to sports exclusively, but also to an extensive range of associations, and role models are not only sports men but from all backgrounds (Palkki, 2015). Swanson (1984) instead believes that boys’ learning attitude works through the analogy to sports: vocal exercises may be felt like learning sport drills. During rehearsal and choirs, as boys may be are generally uncomfortable about their bodies and self-conscious about their voices, (like being labelled a soprano), tactful explanation of MAVC and sensitive terminology should be employed (Cooksey, 2000b; Dilworth, 2012), also to avoid gay or transgender students being negatively impacted (Palkki, 2015); Freer (2007) recommends choosing multi-part songs, and flexible voicing usually labelled as voice I, voice II, etcetera, instead of more rigid SATB scores (Leck, 2009). High-quality choral literature and arrangements for the changing voice is paramount (Cooksey, 1977d). Choral improvisation could be beneficial when voice-parts are not suitable, and for boys’ creative autonomy (Freer, 2010a). Vocal technique and broad exploration of voice change, despite any decrease of choir rehearsal time, may be a strategy to retain boys’ motivation in singing (Henwood, 2023); knowledge and awareness of MAVC’s potential and use through sound technique and vocal care enable and empower boys to accept that their developing voice stage is normal (Killian and Wayman’s, 2010b), and to take responsibility and ownership (Kennedy, 2004); practitioners’ awareness of

students' aural and physical vocal discomfort is important to enable boys to keep singing, negotiating and experimenting their vocal range, the latter may allow an increased range (Kennedy, 2004). Freer (2018) suggests exploring easy techniques on breath management that boys can achieve without feeling awkward or incompetent. Some examples of singing strategies and exercises for male adolescents can be found in Appendix 2.

An earlier onset of puberty recognised in both sexes, and their different physical, psychological, emotional and social development underpin the usefulness of separating male from female adolescent singing rehearsals to better negotiate their needs, implement tailored vocal instructions and achieve safe and efficient singing performances (Patton, 2008). Introducing a single-sex male choir, allowed Jorgensen and Pfeiler (2008) to dedicate more time and care towards their male students' changing voices, eliminate the danger of time-wasting behaviour like flirting with girls, minimise the confusion felt by boys with their intonation when close to their female peers and attract those students who perceived singing to be feminine; having single-sex choirs proved beneficial for both sexes, as their own vocal range could be deeply explored, a positive behaviour reached; shyness or embarrassment to sing, greatly reduced, and inspiration to improve one's potential and achieve great quality within each choir/ensemble was allowed to emerge.

Having a male-only choir helped boys to take more risks when working on certain vocal issues, compared to being more hesitant in the presence of girls; camaraderie was more pronounced (Williams, 2012). White and White (2001) agree that gender-specific singing ensembles can focus on appropriate vocal skills, strengthen a peer group, allow young men to feel less embarrassed, and have appropriate male role models to demonstrate specific skills, for example singing in the head voice, hence helping to promote singing as a male attribute. A only-male workshop can instil in them passion and determination to keep singing, focus on specific vocal training through an adapted repertoire, and boost their confidence, dedication and enjoyment; older and more expert boys can help with training and inspire their younger peers, then boys and girls may come together to perform the same shared songs, but to recruit more males, time and space to interact to one another should be granted to enable a shift in perception that singing is also a male activity (Demorest, 2000). Swanson (1984) concurred that having separate choir sessions was beneficial for both parties: for boys, once provided with appropriate voice parts and more time to solve vocal and postural issues, and explore their potentials with less awkwardness, their interest, energy and musical skills greatly improved, and their curiosity and eagerness to learn voice growth and function. On the other end, Sweet (2010) asserts that, with regards to singing, her choir male students deemed important fun and enjoyment, self-expression, team commitment, cooperation, consideration, mutual effort, serious work ethic, but they never mentioned belonging to an all male group or mixed choir in a positive or negative way. In America in the early part of the 20th century, boys and girls were separated in junior high schools classes, including music (Fisher 2009); more recently, what may represent an obstacle to having separate choirs, is the initial small number of male students participating and the school time constraints (Demorest, 2000). Single-gender choir rehearsals may be challenging to schedule, if this is the case, Dilworth (2012) suggests to allow some time either before or after school for a male-specific rehearsal, where boys can feel safe and free to express. Regarding choristers' placement, strong singers can be purposively situated within

the choir to act as leaders in every section; when some students felt uncomfortable being classified as tenors, their reluctance was overcome by a strategic performance by experienced tenors who were also footballers, which provided validation (Jorgensen and Pfeiler, 2008). Involving older and experienced students in showing and talking through the process to their younger and inexperienced peers may bring more reassurance (Williams, 2012). Leck (2009) believes that role models or popular male singers singing in their high voice may help with accepting the use of the whole voice without yielding masculinity. In mixed- voice choirs, all male students may be at risk of being grouped into tenor or bass, regardless of their voice phase, although being placed in a big group of males may feel more reassuring to them, and increase male engagement (Kennedy, 2004). In mixed-gender rehearsal placement, Dilworth (2012) proposes the following seat plan helping the practice altogether and students' experience, with tenors and alto sharing the same pitches when required, boys with developing voices smoothly moving between different voice parts and boys at the front gaining additional attention from the choir director.

A2 A1 S2 S1

T1 T2 B1 B2

Freer (2007) also suggests either having separate choirs for boys or if not possible, placing boys to one side of the choir group instead of the middle allowing teacher's support and students' independence in skills development. To keep students engaged, rehearsals should be envisaged as an organic and differentiated process, as more traditional instructions and approaches may not work with adolescents' neurobiology and teachers should maintain an open and meaningful dialogue with their students, aiming at research-based instructions and artistic excellence (Freer, 2007). To create a mutual feeling of trust in mixed choirs, choristers should be instructed on vocal change: whether sudden and abrupt or gradual, it can be a smooth experience if they are told it is a natural process, and they can anticipate what is going to happen and realise they are supported (Leck, 2009). Information about their changing voice and its anatomy and physiology is intriguing to them (Freer, 2007). Freer's (2008) study on the impact of teachers' rehearsal instructions to mixed gender choral students, showed that the use of scaffolding language and complete sequential instructional units boosted students' learning experience and prompted them to be more autonomous in building their skills and knowledge, allowing the teacher to respond to individual needs while simultaneously attending the group learning goals. Freer (2009a) investigated students' choral music experience, engagement and enjoyment and motivation in attending the sessions: findings suggested elements of flow, a mental state of optimal experience and performance, including clear goals, challenge-skill balance, students' autonomy, deep concentration and control, feedback and awareness of competence, lack of self-consciousness and self-motivation.

Male versus female teacher

Ashley (2006) claimed that what really matters to boys is good quality teaching and exciting repertoire, regardless of whether the teacher is male or female, whereas Leck (2009) argued that boys' perceptions on specific singing instructions given by a female practitioner may be impacted,

and the majority are hesitant in singing in their higher voice in front of her. According to Williams (2012), the challenges emerging with female teachers teaching boys are that they cannot give an account of sensations experienced by their students during vocal change since they have not experienced them, hence they cannot model; liaising with an experienced male teacher/colleague, appointing occasional clinicians to work on vocal technique, and having a male role model, are possible ways to overcome these issues and she found that humour, a competitive approach with rewards, minimal conversation and an assertive attitude, helped her deal with her only-male choir group.

Conclusions:

Despite Cooksey's approach has become well-respected, its pedagogical implication has not been implemented, even after the 1st UK National Curriculum in 1988 prescribing singing as mandatory in lower secondary schools (Ashley, 2013); the 1995 Curriculum provided no guidance concerning the adolescent development of vocal skills, its individual differences and challenges, risking to set impractical objectives for students' academic singing success (Cooksey and Welch, 1998). Ofsted (2003) reported that boys, compared to girls, were more liable to behave negatively, by disengaging, becoming indifferent or disruptive, when the teaching standards were unsatisfactory; Arnot et al. (1998) highlighted "macho" peer culture may affect boys' approach to lessons and the need for role modelling and single-sex groupings: I argue this may be mirrored in singing if boys are unsuitably supported and guided. Ofsted (2012) emphasised the scarcity and inadequacy of noted singing and appropriate repertoire in secondary schools curriculum lessons. Also in the USA, disagreement on the suitability of curriculum music programmes and teachers having to master their learning on the spot has been acknowledged (Hamann, 2007). Even with abundant information on MAVC, disconnection between research and practice in schools/choirs remains (Fisher, Summitt and Koziel, 2021); Fisher (2009) echoes this inconsistency and lingering confusion on the topic and the need for specific training for trainee teachers, and more music vocal arrangements. Since Killian's (2003) study, despite increased available research and practitioner knowledge on MAVC, practitioners still found working with changing voices quite demanding and information not being enough, confirming limited theory being transferred into the daily teaching practice (Killian, Wayman and Antinone, 2021). I feel this may all have strong repercussions on the overall singing experience felt by male adolescents. To deepen my knowledge and expand current research, I contemplate further investigation on boys' self-perceptions and attitudes on singing, confidence, vocal identity and self-efficacy, or perhaps a comparative study between the two sexes.