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Learning music theory *en passant*: a study in an internationally recognised university student choir

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Abstract

While mastery of aspects of music theory is relevant to rapid learning and understanding of a new choral part, many choirs comprise members with no formal education in music theory. Also, the language of music theory is not intuitive, with many terms having meanings different from those in common use, which can present obstacles for mature learners. The authors hypothesised that students joining an internationally recognised university choir might master aspects of music theory as a by-product of rehearsals. This was tested by having new admissions to such a choir complete a music theory test at the commencement and at the end of a year. The test evaluated ability to name and write intervals and name notes and the duration of notes. Overall results did not reject the hypothesis. Subjects with no formal music training also showed most, and statistically significant, improvement in the questions related to intervals, which are arguably the most useful skills for choristers who do not sight-read. This appears to be a new finding: the literature shows occasional references to music theory skills but their acquisition in a learning-by-doing style is not reported. Some insights into ways of enhancing choral performance are a by-product of the principal focus of the study.

Keywords: Choir training, informal learning, music theory, choral work.

1. Introduction

The body of knowledge generally known as western music theory¹ was developed to provide a systematic vocabulary for describing and discussing key elements of the structure of music and thereby enabling them to be taught, learnt and communicated. Music students wishing to obtain formal qualifications in music performance are typically required to pass examinations in music theory at various levels, usually lagging a few steps on the practice ladder behind their performance proficiency (see the syllabi of the Associated Board of the Royal Schools of Music – ABRSM – where, for example, practical grades 6-8 require candidates to pass grade 5 theory before entering for the practical). In addition, it can be argued that knowledge and understanding of music theoretical aspects would benefit choristers in their musical progression within their chosen choirs, saving valuable time in learning music, improving their musicality and helping them to interpret the music correctly.

The structure of western music theory is not particularly intuitive and it uses terms that are in conflict with those in common use in more broadly based disciplines – features that are an obstacle particularly to adult learning (Page-Shipp and van Niekerk 2013, 2014). An example is that in music theory a gap of two tones is described as a ‘third’ because this includes the ‘first’ and ‘third’ notes. In arithmetic a third is a fraction, meaning one of three equal parts of a whole. This is confusing and probably contributes to the fact that amateur choristers, especially those who have discovered the joys of choral singing in maturity rather than childhood, tend to be reluctant to undertake formal studies in music theory. This is despite the fact that many have learnt to use a score as an aide memoire to what they have learnt from a repetiteur or choir neighbour. It is nevertheless obvious that a knowledge and understanding of note values, intervals, scales, key signatures, relationship of chords and their individual characters (e.g. major, minor, diminished, augmented), rehearsal/articulation/performance markings and musical terms should facilitate the communication between a choral conductor and his/her choir(s).

Reflection on this phenomenon engendered curiosity as to the extent to which the members of an internationally recognised choir acquire such knowledge without a conscious

¹ In this article the terms music theory and theory of music are both used, despite the distinction made by Christine Lucia in her 2007 article.

learning process. The purpose of this study was thus an exploration of this possibility. As one of the authors is the current conductor of such a university choir, it was a short step to the decision to test the following hypothesis using members of the choir, such subjects and opportunities to test their increase in music theory knowledge being readily available.

2. Hypothesis

Members of an internationally recognised university student choir whose members have varying histories in studying music theory, will acquire, or improve, their knowledge of music theory as a by-product of their choral involvement.

3. Literature Review/Theoretical Background

André de Quandros states in his introductory chapter to the *Cambridge companion to music* that "... choral musicians claim that singing in choirs is the world's most popular form of participatory music making" (2012:1). The IFCM (International Federation for Choral Music) has over 200 000 members (individuals, choirs, organisations and businesses) on all continents (www.choralnet.org) and the Interkultur website shows that this dynamic international choral organisation represents 120 000 choirs with 4.8 million singers from 80 countries (www.interkultur.com). Choral music's global popularity is also reflected in Africa as "the musical activity in which probably the most people on the continent actively take part either as amateurs or semi-professionals ... ranging from small ensembles to large choirs of one hundred participants or more ... the spectrum ranges from children to adults singing in all possible voice distributions from unison to multipart singing" (De Beer and Shitandi, 2012:189).

Choir singing's extensive range of benefits (musical, cultural, educational, psychological, social, etc.) is mutually agreed on by choir practitioners as well as scholars and researchers across interdisciplinary fields of study (for example Elliott, 1993:16; Durrant, 2003:46-47; Smith and Sataloff, 2006:148; Welch, 2007:319-320; Ashworth Bartle, 2008:71; Garnett, 2009:2-3; Dahl, 2011:9-12; Brewster and Garnett, 2012:258). John Rutter (2012:xiv) summarises some of the multidimensional qualities of participating in choir singing: "In choral music, we can discover and express our own selves, we can form social units that are

potentially a microcosm of an ideal society, and yet at the same time we assert that a diverse world can celebrate its diversity and yet be at one”.

There is much literature available on aspects of choir singing such as those indicated in the preceding two paragraphs. However, very little material can be found in connection with the learning of music theory, and the benefits thereof, during choral participation.

Lucia (2007:166) distinguishes “two kinds of music theory ... as an interpretative and ‘critical’ set of theories used mainly in music analysis, and theory of music as an ‘uncritical’ set of practical tools for both composition and analysis”. Neither of these may seem applicable to the practical needs of choral singers, although Lucia does note (2007:175) that “Theory of music, as distinct from music theory-as-analysis, is understood in South Africa² (and probably elsewhere) as a set of sonic principles or a body of knowledge underlying musical material. It is sometimes referred to as the ‘nuts and bolts’ or ‘building blocks’ of music”. Earlier in her article (p.167) she described theory of music as being “seen as foundational, something that Western musicians are trained into whether they later pursue the more practical or speculative branch of music, as something necessary to the act of being a musician in the Western sense”.

Current South African choirs all typically programme multicultural, and especially African, repertoire, for which an understanding of western music theory may not be required and which may be learnt by choristers purely aurally. Nevertheless we would argue that understanding of the theory of music is helpful to choir members, not least for the reason mentioned in the Introduction above of improving their musicality and especially in terms of intonation. It does not only relate to “being a musician in the Western sense”, despite Buonviri (2015) noting specifically that “much Western music requires a synthesis of aural and notational musical fluency” (p.443).

In a chapter entitled ‘Authentic choral music experience as “good work”’: the practice of engaged musicianship’ one might have expected the seminal author Doreen Rao (2012) to refer to an understanding of music theory, both the content thereof and ways of conveying

² The university choir under discussion is situated in South Africa.

such content, as part of “engaged musicianship”. However, even the mere use of notation is not mentioned in the chapter. Writing about sight-reading choral repertoire, Paulk (2004) held conversations with five well-known conductors. The only reference to aspects of music theory, which one might expect in connection with sight-reading, is mentioned in the conversation with Dennis Shrock who noted:

I allow the technical aspects of the music to develop as the ensemble gains an understanding of the music’s essence, from intervallic relationships and phrase shapes to large-scale structural designs. I provide the singers an opportunity to feel the reason for and inevitability of pitches, intervals, rhythmic groupings, phrases, tempos ... (p.31).

Bennett Walling, writing about ‘Secondary choral directors’ multicultural teaching practices, attitudes and experiences in international schools’ (2016), fails even to mention using notation (requiring some knowledge/understanding of music theory) when teaching Western repertoire as opposed to perhaps teaching musics of other cultures aurally, for example. This is despite the fact that “choral methods” was one of the keywords given for the article.

The focus of Varvarigou’s 2016 article is on cooperative learning in choral conducting education, and she notes, not surprisingly, that “learners ... when given the choice, favour cooperative and participatory education over didactic instruction” (p.117). Didactic instruction could refer to the teaching of music theoretical aspects during choral work, although music theory is in no way referred to directly. The title of this article by Varvarigou begins with the quotation “I owe it to my group members ... who critically commented on my conducting”. Such critical comment would not have included any reference to music theory teaching and learning if this had not been an integral part of the work done.

Varvarigou quotes Colin Durrant who “proposed a model where the behaviour and general communication skills of a conductor can encourage responsiveness from the students to a higher degree than a satisfactory level of technical and music competence” (p.118). One might think that “technical and music competence” would encompass music theory knowledge, but a few lines later this article describes “musical-technical skills” and the only aspect of that which is defined in such a way as to suggest music theory is “aural and error

detection skills” – the other aspects such as “clear and appropriate gesture and vocal demonstration; recognition of the important (sic) of warming-up voices; and strategies of establishing the character of the music” are entirely separate issues.

Varvarigou refers to several other authors on the aspect of “rehearsal approaches” specifically, but a search for references to approaches in the use of music notation and choristers’ ever-increasing understanding of the theory of music yielded little specific. One of these authors, Brunner (1996), does write about “Rehearsal time ... spent ... practicing the ... mechanics of music making: learning notes, rhythms ...” (p.37). Later he writes about “Successful rehearsals teach theory ... in an integrated fashion from the musical score itself” (p.38) – but that is all he says about the teaching of theory in choral rehearsals.

In explaining his “performance pyramid” with its “building blocks for a successful choral performance”, Zielinski merely mentions notes and rhythms with which singers should be comfortable, “After several weeks of rehearsals ...” (2005:47). This falls under the only 15% of time he allocates to what he refers to as the “Personalize” part of his pyramid – other than that, there is not a word to be found on the topic of teaching music theory as part of choral rehearsals.

Freer’s 2009 article focused on “scaffolding” and “sequential units” during choral instruction, but no particular attention was paid to the use of music-theoretical concepts as part of such scaffolding and sequential units in the teaching of music theory during rehearsals. Freer did, however, refer to several publications with the involvement of Yarbrough, which appeared to hold promise.

In her 2002 article Yarbrough notes that:

Extant research demonstrates that subjects gave higher ratings to patterns that began with musical information than to those that began with directions, to patterns that ended in approval than to those that ended in disapproval, and to patterns that ended in specific reinforcement than to those that ended in nonspecific reinforcement (p.30).

Yet she also notes that “Although experienced and inexperienced teachers say that presenting musical information more than other types of task presentations is more

effective, they do not appear to do it in rehearsals". In discussing the "teaching artistry of Robert Shaw" (part of the title of this article in which she analysed the content and sequence of Shaw's verbal task presentations to a chorus of 145 singers, selected from over 400 applicants) she draws attention to the practice that:

By establishing the goals and objectives during the first three minutes of rehearsal, Shaw also outlined the sequence of delivery of the musical elements of the score: first, pitch and rhythm; next, text; finally, dynamics. Only then would he be ready to develop the ability of the ensemble to accurately and sensitively perform the elements of pitch, rhythm, text, and dynamics (p.33).

Later, on p.35, we read what could be expected: "The more completely that conductors outline the musical task, the better they will become at analyzing and exploring the capabilities of the ensemble and the more effective they will be at *initiating* the ensemble's successful responses to musical tasks, rather than inappropriately *responding* to the ensemble's errors in interacting with them".

Despite Yarbrough's references above to what she terms "musical elements" and "musical information", it is clear from most of her writing, and much of it with varying fellow authors such as Madsen, that her interest is in filling a particular gap (sequencing tasks in the ensemble rehearsal) which she has found in literature relating to choral activity. Publications with her involvement do not, however, focus on the musical theoretical aspects which our current research, reported on in this article, has identified as an under-reported aspect and is hence our focal point.

Reviewing the relevance of musical notation in the July 2017 BJME co-editor Martin Fautley discourses on the various contexts in which formal and informal learning can take place (Fautley, 2017). This study focuses on the possibility of unconscious learning of aspects of music theory, or as we have termed it, *en passant* learning.

4. The Choir

Background

The Choir was formed in 1968, has enjoyed international visibility for much of its existence, and is currently performing regularly overseas and earning top prizes in competitions.

The Choir's current mission is ... to make a contribution towards the cultural development of the student corps and the cultural enrichment of the community by means of choral singing. The Choir also endeavours to promote a worthy image of the University through striving towards the highest possible artistic standards together with a code of conduct that meets the highest requirements of companionship.

The 78 members, mostly not music students, include Afrikaans, English, Northern Ndebele, Swati, Tswana, Venda, Xhosa and Zulu speakers. Any full time student under the age of 26 years is eligible to audition and several hundred candidates do so each year, with approximately 10% being accepted. "Voice group leaders", who are experienced choristers with leadership qualities, are appointed to assist other choristers to master their music. Some are music students but these are not plentiful in the membership. The music sung often divides into eight parts (SATB divisi) and thus a leader is required for each part.

The Choir rehearses every Tuesday and Thursday evening from 17:45–20:00 while the university is in session. There are also several rehearsal camps and ad hoc rehearsals when required for special projects. Their main aim is to present a programme that is considered relevant within the Choir's social context and of the highest artistic quality.

Music theory training in the choir

The choir members undergo no formal music theory training in the course of learning and performing their pieces. Students are issued rehearsal tracks and sheet music of the entire repertoire at the start of every choir year. The tracks play the individual voice parts of the choristers' voice groups and they are expected to study the music by ear, especially during the holidays and ahead of rehearsals. This practice is effective, especially for a choir that is

comprised almost entirely of non-music students although the greater majority have sung in previous choirs (primary school, high school or youth choirs) and can follow the sheet music. Only a handful, if that many, can sight-read. Even music students in the choir struggle to sight sing.

It is nevertheless possible, and indeed highly likely, that very limited aspects of music theory are passed onto choristers *en passant* during the rehearsals. Italian, German or other non-English terms are translated by the Director and the singers pencil them in on their scores. Letter names are often used when discussing aspects of the music, but the meaning of the lines vs spaces, a first step in music theory learning, is not explained. Although the conductor might say, “basses, please watch your intonation on the E Flat in bar 17”, he would not actually explain the origin or meaning of ‘E Flat’. The same is true for intervals: the conductor might refer to the “augmented fourth” being difficult to sing, but would not require choristers to remember it or expect them to answer questions based on it.

The only time that a “music theory lesson” might actually take place is when the subdivision of rhythms is explained. An integral rehearsal technique for the choir is the singing of subdivisions within the music. If the piece is in $\frac{3}{4}$ time, but the smallest note value is the quaver, then choristers sing the entire piece, on the quaver, essentially subdividing the main pulse. At the beginning of each choir year, the conductor explains this process and very briefly how the subdivision of notes works. Throughout the year he would, for example, remind the tenors to hold the “minim” for its full length, or reprimand the sopranos for not adhering to the dotted crochet.

Many choristers find the system of music notation fascinating and do their best to learn more by asking fellow choristers. There is always someone in the group who knows the difference between a crochet and a quaver, and they always share this information. But never has a member been expected to sit and write a formal theory test. Typically, everything that they might have picked up would have been in passing and from rehearsals only.

5. Research Approach

The annual availability of a group of new entrants to the Choir with variable exposure to formal music studies created an opportunity to assess the extent of music theory knowledge that is acquired ‘contextually and parenthetically’ (Elliott, 1995:61) in the course of a choir year (about 9 months in this case). Applicants for admission to the Choir were tested for their knowledge of music theory, although this was not a condition of admission. At the end of the choir year, successful applicants were re-tested using the same question paper. This was first undertaken in 2014 and repeated in 2015, to increase the sample size which was finally 42.

Auditions. The applicants were tested primarily for their ability to sing passages played on a piano and for the quality of their voices, although the personal interview also explored each applicant’s choral singing history and team orientation.

Music Theory Test (see Appendix). Marks were allocated for

Question 1: Naming Intervals	7
Question 2: Writing Intervals	7
Question 3: Naming pitches. (Bass & Treble Staves)	7
Question 4: Naming Notes	<u>5</u>
Total	<u>26</u>

In analysis, all questions were given equal weight, thus a ‘perfect (100%) score’ would be 26/26.

Biographical Data collected. The applicants were asked to record

Personal Data	Educational/Music Background Data
First name and surname	School attended
Gender	Study course and year
Date of birth and age	Choral experience
Mother tongue	Instrument studied and grade, if any Theory grade achieved, if any

Data Analysis and Results

The focus in analysis was on improvement in scores in the music theory test undertaken before and after the first year of participation in the work of the choir. Overall improvement and improvement per question were calculated and tested for statistical significance using a

t-test and also a t-test for paired differences. The performance of some subgroups, defined in terms of their formal music experience, was tested in the same way. The overall results using this criterion are in Table 1.

5.1 Overall statistical significance of improvement in test performance – all choir members

The overall results for the full test are given in Table 1.

Table 1. Statistical Improvement Overall in Test Scores for All Choir Members

Full sample	Overall	
	Numerical score	In percentage
Mean initial score (year start)	17.6	68%
Mean repeat score (year-end)	20.0	77%
Range of improvements*	-6 to 15	-23% to 58%
Mean score improvement, out of 26	2.4	9%
Level of significance** (%)	$p < 5\%$	

*Some repeat scores were lower than the initial scores; hence, 'negative improvements' are noted.

**As per t-test. Table 1 records: A mean net improvement of overall test scores of 2.4 (9%).

A range of changes in overall test scores from -6 (-23%) to 15 (58%).

5.2 Per question statistical improvement in test performance

As the individual questions address different aspects of music theory, particular attention is given to improvements in these specific questions. Table 2 shows the improvement per question for all choir members and also for subgroups related to their reported training.

Table 2. Statistical Significance of Per Question Improvement in Scores – All Choir Members – According to Previous Music Training

All choir members (numerical scores)	Overall	Q1: Naming intervals	Q2: Writing intervals	Q3: Naming pitches	Q4: Naming notes
Mean initial score (out of 26) (year start)	17.6	5.0	3.9	4.9	3.8
Mean repeat score (year-end)	20.0	6.0	4.4	5.4	4.2
Mean improvement in score	2.4	1.0	0.5	0.5	0.4
Range	-6 to 15	-2 to 7	-4 to 3	-1 to 6	-2 to 5
Level of significance* (%)	$p < 5\%$	$p < 5\%$	$p < 10\%$	$p < 5\%$	$p < 10\%$
Segmented by previous music training. (Levels of significance)					
No previous training	$p < 5\%$	$p < 5\%$	$p < 5\%$	NS	$p < 10\%$
Keyboard training	NS	NS	NS	NS	NS
Other instrument training	NS	NS	NS	NS	NS

Significance evaluated using a paired t-test. A Wilcoxon (non-parametric) test mirrored these results.

NS - not significant.

*5% level conventionally reflects significant difference. However, in this study, 10% level of significance is considered as worth reporting.

For each question the overall improvement in score, although small (0,4 to 1,0), was statistically significant, albeit at different levels. When the sample was segmented according to the extent of previous music training, only those who had no previous training showed a significant improvement.

The grouping of the results and the presence of some initial high scores have obscured the extent of some of the improvements in music theory understanding. For example, if one focuses only on those students whose scores improved, the distribution is as given in Table 3. Approximately 60% of the 42 subjects of this study achieved improvements and nearly 30% of them improved by over 23%.

Table 3. Distribution of Improved Overall Scores

Range of improvement in initial scores	%	Number in range
< 5	<19	12
5-10	23-38	9
11-15	42-58	3

5.3 Improvement in test performance using music theory examination criteria

Scrutiny of the data suggested that statistical significance was not the most insightful way of evaluating the pedagogically important outcome of the research. More interesting was the use of a typical pass/fail segmentation of the data, using the pass criterion of 66% employed by the ABRSM in music theory examinations. When the data are analysed in this way, the picture that emerges is summarised in Table 4.

Table 4. Results Using Music Theory Examination Criteria

	Number of candidates	Percentage
Total	42	100
Passed first round (>65%)	27	64
Failed first round	15	36
Failed first and passed second round	5	12

It can be seen that 5 of the 15 members who failed the first round passed the second round by achieving a score exceeding 66%. In addition, those students achieved a mean increase in

overall score of 6 out of a possible 26, i.e. 23%. As a measure of improved competence in music theory, this is a commendable achievement and that with no apparent extra effort: what they learned of music theory was a mere by-product of coming to rehearsals to sing. In view of an interest in the value of the keyboard layout as a mental model in understanding music theory (see Page Shipp and Van Niekerk, 2013) three subgroup analyses were undertaken looking at

- Keyboard students (N=11)
- Students of other instruments, including voice (N=19)
- Students with no previous music theory exposure (N=12).

The analysis as reported in Table 2, i.e. for overall improvement and improvement per question, was also undertaken for these three subgroups. The only subgroup that indicated a statistically significant overall increase included those who had no previous exposure to music theory, and then on Questions 1, 2 and 4 only. However, when the alternative criterion of examination success was applied, some results that are more interesting emerged. The full set of results contains too many null outcomes to warrant separate tabulation, but the following bullet points give full detail on the relevant ones, which were selected by inspection.

- Of the students with **keyboard training**, only two scored less than 66% in the first round, viz 14/26 and 15/26. In the second round, both scores improved by relatively large amounts, viz 8 and 5 respectively. These large increases tend to reinforce the claim by Page-Shipp and Van Niekerk (2013) that the keyboard layout is an accessible guide to much music theory.
- Those with **wind instrument training** all scored very high initial scores, viz 23/26 or more, which left little room for improvement.
- Similarly the **voice trained** students all scored 22/26 or more in the first round.
- The students **with no formal music training** showed impressive improvement in their scores: of those who had scored less than 66% in the first round, only two recorded 'passing' scores in the second, but the average score in this group doubled. When the results were analysed, this group had a mean improvement in scores in Q1, naming

intervals, of 3,9 from an initial 1,2, an increase of 236%, and in Q2, writing intervals, from 0,3 to 1,58, an improvement of 533%.

5.4 Correlation between music theory learning and other candidate characteristics

This study was made possible by the availability of a choir with a large number of annual recruits whose experiences in the learning of music theory covered a wide range. The opportunity of collecting extensive data from each candidate was seized but some were not relevant to this study and analysis according to some of their characteristics did not yield significant results. Possible influencing factors such as 'school attended' and 'previous choral exposure', for example, provided too few data-points per characteristic for valuable analysis. For the sake of brevity only significant results are reported in this paper. The full 26 x 42 matrix of data is available from the authors.

6. Discussion of the choristers' improved understanding of music theory

The context for the results. The questions that the choir members were called upon to answer would be familiar to music theory students in ABRSM Gr 1 and 2. They are focused on topics of particular relevance to a choir leader communicating with his/her choir. Identification of intervals, Questions 1 and 2, is important in learning parts accurately, while identification of a note by pitch and name is helpful in discussing a passage.

A few of the students came to the test with a background in music theory well beyond the requirements of the test. Their high initial scores meant that the potential for large increases on repeat was limited. The authors believe that any attempt to trim such data from the database for statistical analysis would be open to criticism and no attempt has been made to do this, although it is acknowledged that it does bias the results to some extent, in particular the mean improvements in test performance. The alternative approach, of comparing the scores to 'examination' standards, was more insightful.

Overall test performance. The results in Table 2 show that there was a statistically significant improvement in overall test scores at the 5% level. This demonstrates that the study hypothesis, viz *Members of an internationally recognised university student choir (in South Africa) will acquire, or improve, their knowledge of music theory as a by-product of*

their choral involvement, can not be rejected, and confirms that members of an internationally recognised university student choir are likely to acquire, or improve their, knowledge of music theory as a by-product of their choral involvement. That this choir is situated in South Africa does not appear to have any influence on the findings.

Performance in specific questions

The four questions tested different aspects of music theory knowledge that could be considered useful in training choirs. Questions 1 and 2 tested knowledge of intervals, Question 3 of pitches and Question 4 of note durations. All showed statistically significant improvements, Q1 and 3 at the 5% level and Q2 and 4 at the 10% level. The levels of improvement were mainly similar and no noteworthy trends emerged.

Performance according to previous music studies

Earlier work (Page-Shipp and van Niekerk, 2013) had revealed that some musicians work with a mental model of a keyboard in their minds when studying a new piece. This gave rise to the question whether there was any significant difference between the improvement in scores for Keyboard students and students of Other Instruments including Voice. The results showed no significant difference overall. Since the mean starting score was 20/26, with only two values below 16, the space for improvement would have been limited. Similarly, when all those members with Other Instrument experience were analysed, they too were found to have high initial scores (mean 20) and no significant improvement in score.

Performance of group with no previous exposure

The increase in score for those members who had no previous formal music training was significant at the 5% level for Questions 1 and 2, those relating to intervals. Between them, they accounted for 70% of the improvement. This would be a major plus for a choir conductor, as these are arguably the most useful skills of those tested. Recognition of intervals is key to learning, and ultimately sight-reading, a part in a score. This is true both for following the contour of one's own part and for detecting accuracy via harmony rather than disharmony with other parts.

David Elliott in his initial 1995 book, *Music Matters*, averred that music theory should be learnt by the Praxis method, alternatively described as 'parenthetically and contextually'.

(Elliott, 1995:61). However, the literature revealed a dearth of published information on the extent of music theory training received, explicitly or *en passant*, by choir members. References that hinted at the importance of this did not follow the point through (Rao, 2012; Bennett Walling, 2016; Varvarigou, 2016). Granted that these skills are at a lower level, from a choral viewpoint, than intonation, memory of parts and concentration, for instance, this is nevertheless a surprising lacuna, especially for amateur choirs.

7. Summary

The hypothesis that members of an internationally recognised university student choir will acquire, or improve their, knowledge of music theory as a by-product of their choral involvement was tested by having new admissions to the choir under discussion complete a music theory test at the commencement and end of the year. The test evaluated ability to name and write intervals and name notes and the duration of notes. Overall results did not reject the hypothesis (statistically significant at the 5% level) and provided details of the relative impact of learning in relation to these aspects of music theory. Subjects showed most, and statistically significant, improvement in the questions related to intervals, which are arguably the most useful skills for choristers who do not sight-read. This appears to be a new finding: the literature shows occasional references to music theory skills, and some suggestion as to their importance for choristers, but their acquisition in a learning-by-doing style is not reported. The results also draw attention to actions that choir leaders may take to assist choristers in improving their musicality.

8. Recommendations

Further work should look more closely at learning about key signatures and scales – an important aspect of the understanding of intervals .

Investigation should also be undertaken as to the role of choral conductors in including music theory learning as part of rehearsals, for the benefit of the singers personally, their individual performance in any choir and the blend of voices and overall sound and standard of performance within the particular choir being led. It would appear clear from the lack of material on this point in the existing literature, despite a vague general acceptance that understanding of music theory can have value in choral work, that new literature needs to

be generated on music theory's role and importance in choral singing, plus the role of the choir conductor in teaching/helping to generate such understanding. The need for literature is not only because, as mentioned in the Introduction to this article, amateur choristers typically demonstrate reluctance to undertake formal studies in music theory, but conductors currently have few role models available to follow in the facilitation of music theory, how best to do so methodologically, and what content to concentrate on most profitably.

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Appendix: The Music Theory Test used in this study

Name of Audition Candidate:

Instructions

1. Assist us with this research project by answering the questions in the attached test to the best of your ability
2. Take as long as you like
3. Do not discuss the test with other candidates for auditions
4. Return the question paper to Mr Barrett before leaving

Declaration

I understand that

- My participation in this project is voluntary
- My test score will not affect my chances of acceptance into the choir
- I will not be identified in any publication of the results.

Signed:

Thank you for help.


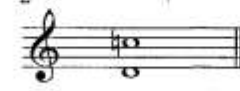
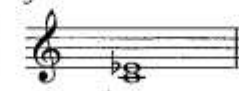
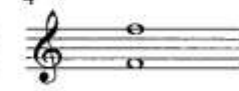
Roy Page-Shipp.

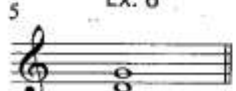

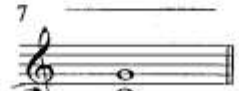
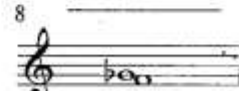
Prof Caroline van Niekerk.

Michael Barrett.

Name Intervals I

Name the interval above the given note according to its distance.





1  2  3  4 

5  6  7  8 


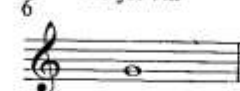
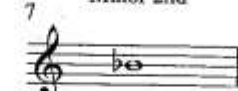
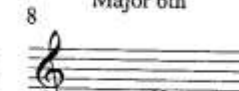
Ex. 6th

Write Intervals II

Create the named interval by placing the correct pitch above the given note. REMEMBER TO PREFIX ACCIDENTALS IF AND WHERE REQUIRED.

1  2  3  4 

Minor 6th Major 7th Minor 2nd Major 6th

5  6  7  8 

Minor 3rd Major 2nd Minor 2nd Unison

Name Pitches III - Treble & Bass Staves

Name each pitch.

1  2  3  4 

5  6  7  8 

Ex. D

September 04, 2013

Name Notes IV

Name each note value

Ex. Dotted minim

1



2



3



4



5



6



Thank you for your participation in this research project!