

Soprano, Treble or Cambiata? Longitudinal tales of adolescent growth and vocal pedagogy



For much of the twentieth century, it was commonplace for British boys from many different walks of life to join church choirs. Unlike the present time (2021), to be a “choirboy” in, say 1950, was a relatively unremarkable part of growing up. Most of these boys had no particular ambition as singers and were seldom, if ever, taught to sing. What they knew and could do was learned mainly by a process of osmosis, through imitating what the older boys in the choir did. There were few people who could have taught them should they have wanted to learn more. Most choirmasters were organists with little knowledge of singing. The term “treble” became a popular description for these boys, in preference to the word “soprano”, which described the part they sang (oddly, they very seldom sang alto, but that is another story). In later days, as girls and women have encroached more and more into the previously male domain, the word “treble” tended, for some enthusiasts of the church choir genre, to take on a gendered meaning. “Trebles” sang without any hint of vibrato and until girls demonstrated otherwise, could only be boys. This “pure” or “guileless” male timbre was (apparently) what the composers wrote for.

Every so often, there comes a boy who is exceptional by virtue of the fact that he *does* want to learn to sing or is ambitious to become “a singer”. Quite often, these boys disrupt the cosy status quo of the treble world and, fortunately for researchers of boys’ voices, they leave their mark in the forms of CD albums. It was such boys who were the subject of my post-doctoral research fellowship. Their lives and work formed part of the study. The other part of the study was concerned with what “normal” boys and girls in schools up and down the country thought of them. From this developed all my publications on vocal identity, or “how high” boys should sing. The book of that title was an abbreviated and updated version of the original monograph. Here, I attempt to build on Cooksey’s work through telling the story of three different paths taken by boys I had the opportunity to study longitudinally.

Bel Canto Soprano

The word “soprano” can refer to a vocal part, or equally to a voice type. If it is understood to mean a part ranging from C4 (middle C) to C6 (high soprano C), then few boys are sopranos. The majority sing in the mezzo-soprano range (A3 – G5) though in the English choral tradition, they are usually found on the soprano line and the lower range of their voice is seldom much developed. Allegri’s famous *Miserere* can result in a scramble for a boy sufficiently capable who can also reliably hit high C6, whilst Britten’s *Ceremony of Carols* for boys who can sing well at the bottom of the range, but such compositions are exceptions. When used with its original meaning, the word “treble” refers to the higher of two parts sung by boys during the sixteenth and seventeenth centuries (when much great polyphonic choral music was composed) but in the popular English usage of today, aside from the girl

question, two particular beliefs that define “treble” conflict with type of Bel Canto singing described here.

- The treble voice has no vibrato (it is “pure”, “ethereal”, “innocent”, “guileless” etc.)
- All boys with unchanged voices are “treble” regardless of what the actual range of their voice might be.

This short contextualisation is necessary because Louis-Alexandre Desire was one of those boys who wished to be a “singer” rather than a “treble” and happened to be in the right place at the right time for my research (if Paris can be considered the “right place”.) Louis was featured on pages 194 – 200 of my monograph, though under the pseudonym Yniold. Time has now passed, Louis is an adult and that nicety can be dispensed with. Here, first of all, are some of the things I wrote at the time, when Louis was aged between eleven and twelve.

“Yniold” was only eleven when I first met him at his Paris home and at the beginning of what looked to be both a promising and possibly unique career. His claim is to be perhaps the only boy whose development is currently in this tradition. . . . Mozart and Mendelssohn were favourite composers. He said he listened mainly to classical with “not much of pop”. He was unable to name any English rock bands, but his face lit up when I asked him if he had any particular favourite works by Mozart. The obvious question, then, is what he regards as “real singing”. . . He repeatedly mentioned to me the age of seven as a watershed in his young life, and this appeared to be connected with his hearing a recording of Ernest Lough. This, he decided, was “real singing” and how he wanted to sing. He is trained in the old Tito Schipa Bel Canto tradition, at the time of writing through video link with a teacher now living in Australia, believed to be one of the last living exponents of this particular tradition.

Most of Yniold’s work has been on the stage in opera, in traditional “classical” venues such as chamber recitals or, for example, an outdoor performance of *The Magic Flute*. . . He had some choral experience in two French choirs. The first of these he described as a “horrid choir”. . . it emerged that the issues were that he had not known at the time what “real singing” was and had not liked the teacher. The second choir had been better and he had toured China with it as a soloist, but his mother explained about how other parents had become increasingly jealous at the number of solos that were being allocated to him. A key principle of the Tito Schipa Bel Canto tradition is that the boy is seen as an apprentice to a singing master. Any boy considered good enough to be taken into such a relationship might expect to progress to the stage of carrying on the tradition of the Bel Canto master when he matures as an adult singer.”

Some words about this “singing master” might be appropriate at this point. Sometimes referred to disparagingly as “the Butterfly Man”, the judgement that the late Bernard d’Abrera (1940 – 2017) was a Bel canto singing master might be D’Abrera’s alone. D’Abrera did indeed live in Australia. He was associated with the University of New South Wales and the published work for which he is mostly known is on lepidopterology, though whether his is truly scientific work is open to debate, since he “absolutely refused to submit his work to peer review with the predictable result that his books contain numerous errors.”¹ Moreover, he was a believer in creationism and wrote many polemics attacking the theory of evolution. I detected his influence here when I took the questioning twelve-year-old Louis round Liverpool Cathedral. D’Abrera’s qualifications in singing, his claim to have learned an art passed to him by past masters and therefore his entitlement to be called a “Bel Canto singing master” can only be a matter of conjecture, though such conjecture is informed by the observation that he was a man of “innate pomposity, combined with an ego of monumental proportions”².

Whatever the truth of the situation, he clearly recognized in Louis an unusual talent and took a serious interest in his coaching and development. Some of his observations merit quotation, analysis, and

reflection. A key objective for a Bel Canto master is to impart a high degree of breath control that will facilitate a sustained beautiful tone over long legato phrases as well as rapid coloratura passages³. Of the nine-year-old Louis, D'Albrero wrote

A tiny, shy 9-year old...with a wonderfully clear instrument and a musical sense I could only describe as prodigious. Alas, no-one had imparted to the young lad the vital mechanisms of breath control, not even a semblance of 'phrasing, line and aptly nurtured tone'.

Breath control would therefore have been a key feature of Louis' training throughout early adolescence and the results might be judged through the samples provided on this website. The first piece I heard Louis sing was Coates's *Star of God* (sample 1, age 132 months). Air shortage at phrase ends and frequent breaths in inappropriate places are obvious in that recording. The learning and improvement are evident in Ravel's *L'air de l'enfant* (sample 4, age 146 months). However, significantly for our present purpose, D'Abrera writes about tessitura and voice break.

If there are to be found any secrets of Bel canto, then it is precisely in this carefully disciplined adjustment of the tessitura and its placement that they may be found.

Here, D'Abrero is describing the process of "bringing the voice down in its entirety by gradual discipline . . . a systematic lowering of the voice to a different clef." In this way, the voice does not "break" and the "vocal talent of the child is...preserved into adulthood". By the age of 168 months, D'Abrero has taken his student to the key of Eb for Handel's *Where'er You Walk*, which results in a bottom note of Bb3 and a tessitura in the lower portion of the middle C octave. Were D'Abrero training a choir, this would not be possible, for the boys must continue to sing in the same key as all the other singers, a contributory factor to voices "breaking" through being prevented from following the course of their natural development.

On this point, the luxury of teaching an aspirant Bel Canto classical soloist rudely parts company with the reality of how most boys come to record solos – as an adjunct to their membership of a choir. However, the cambiata system does allow the voices of boys in chorus to be brought gradually down and, when used correctly and skillfully, can result in quite beautiful tone. An excellent example of this is in the recording of Oliver Tarney's pieces in the *Emerging Voices* series by the cambiata boys of Winchester College. D'Abrero's approach, however, parts company with cambiata over what happens next, for he writes "at the end of June 2009, the singing voice of the boy had descended about as far as I would permit it, and I immediately shut him down for a period that should last two and a half to three years". The reasons or scientific justification for what appears to be little different from the old, though largely discredited, practice of a "rest" advocated by Garcia are not given. Perhaps D'Abrera felt he had no need to justify himself.

Where'er You Walk introduces another issue of significance, that of vibrato. It will be detected that there is a vibrato that is quite rapid, though shallow in pitch variation. Some singing teachers would call this a "bleat" and a bleat is regarded as a fault. There are other examples in the *Il Passagio* disc where the "bleat" (if that is what it is) is significantly more pronounced. I have not included these in the samples I have given, for I felt it fair to Louis to present only his better work, and readers may be influenced by that decision. A full discussion of vibrato, its cultural significance and the technicalities of its production are well beyond the scope of this short account. The specific significance here lies in the fact that boys, of whom Louis was but one, who have formed views as to what they regard as "proper singing" seem to think it is necessary to produce it. Most boys sing without it, and this "straight" tone is generally preferred by choral directors on account of the prevailing belief that such tone is correct for the genres that are associated with boys, and necessary for clarity in polyphonic

textures. Again, there is a lengthy discussion to be had that is well beyond the word limit available here.

The critical issue that does fall within the present remit concerns the responsibilities towards a boy who wishes to produce vibrato. It can be a question of fools rushing in where angels fear to tread. Just as it is the case that most boys (and similarly aged girls) sing naturally with a straight tone, so it is the case that adult singers with good technique generally develop a pleasing vibrato through nothing more than that technique. I have come across something like this in boys, generally older ones who sing soprano though their speaking voices are at baritone pitch. Problems arise with misguided attempts to induce vibrato. D’Abrera complains of a critic who “demonstrate[ed] his own utter ignorance of the natural vibrato that is produced by a voice resting on a diaphragm in dynamic tension.” Is this scientifically correct? D’Abrera cites no authoritative sources in support of his position. There is much dubious writing about the diaphragm and its supposed role in breath support, though the problem undoubtedly does have much to do with the overall management of breath. The conclusion that I find it difficult to avoid is that a bleat is an induced fault and that D’Abrera did not know how to correct it. This is a salutary lesson for all who take responsibility for young people who show outstanding talent.

Contemporary English Treble

Is there such a thing as a “contemporary English treble”? One answer might depend upon the definition of contemporary. We have already touched on other possible definitions. A voice in the mezzo-soprano range with a straight tone. More dubiously, “a boy”. More controversially, a young person who has learned to sing by imitating other young people in a choir. More historically correctly, a high vocal part above the more normal boys’ range of mean. I am going to introduce now a technical definition that derives from the United States. Kenneth Phillips gives the following definition of a contemporary English treble. It is a boy who is “not permitted to use even a mixture of chest and head voice, who extends the head-voice sound below pitch C3 as low as possible...who keeps the sound pure through diminished breath support, whose singing can be beautiful in the upper range but lifeless and failing to project in the lower.”⁴

I think have must have written more words on this topic than all else. In particular, I have written reams attempting to deal with some of the nonsense that is written about “chest voice” and “head voice” (more later). I have spent many, many hours studying spectrograms and electroglottogram plots derived from visits to boys’ homes and schools in an effort to verify or otherwise Phillips’s contention. I think it fair to say, though, that the previous paragraph in its entirety defines a contemporary English treble rather well. Max Matthew, who I recruited as a longitudinal study participant at the age of ten fits the definition nicely – with one possible exception. I coached Max myself and did so with reference to John Cooksey’s work, which led to an interesting split between choirs Max sang with that followed Cooksey’s advice and choirs that promoted what Phillips calls “the infamous English voice break”.

When I say I coached Max, I did not teach him to sing for I am not a singing teacher. Max learned the basics through the time-honoured method of the English treble – copying what older boys in the choir did. My efforts were confined to managing his solo repertoire, teaching him music theory and history and the interpretation and performance of the pieces he sang. All this taking place in parallel with detailed monthly measures of physical and vocal development. A full technical/scientific account is not intended here, but it is difficult to present recordings made by Max without some reference to the scientific measurements. I have tried to keep these to a minimum, giving a fuller scientific treatment elsewhere. Before I refer to Cooksey’s work, I need to place Max’s singing regime within the

classification system for vocal loading devised by Michael Fuchs. Fuchs and his colleagues produced a validated scale of singing activity level which they claim is fit for the purpose of demonstrating the correlation between singing activity and parameters of voice performance “at the level of a group comparison in scientific investigations”⁵.

The Fuchs Singing Activity Classifications

“Strain”		Vocal Instruction	
A	Only spontaneously – not in front of an audience	1	No training
B	Occasional organized singing in familiar milieu/occasional public singing	2	Vocal training in the group
C	Regular organized singing with concerts: up to 6 hours per week	3	Individual voice instruction
D	Regular organized singing with concerts: Over 6 hours per week		

Here is Cooksey’s original (1977) description of what might be expected from such a boy immediately before any changes potentially ascribable to puberty take place, i.e. age between 11 and 12.

John Cooksey Description of Voice Immediately Before Change

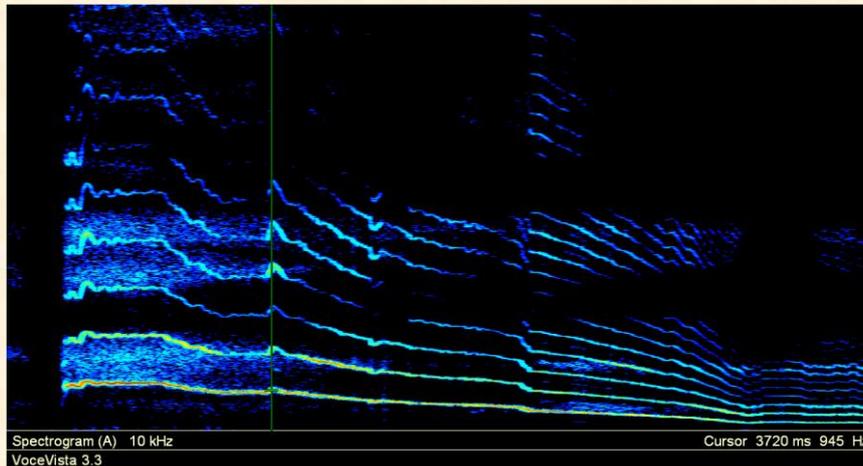
- (a) Pre-pubertal period. May extend into 7th grade (i.e. UK Y8).
- (b) Mean average pitch frequency of speaking voice about middle C or B
- (c) Singing voice: full, rich soprano-like sound. Voice reaches pinnacle of development for childhood. Range: A3 – F5 Tessitura: D4 – C5 Register: Only modal sound of soprano-like quality throughout range. No lift points apparent yet.
- (d) Usually sings soprano part but may also manage some harmony parts (sop. II or alto).
- (e) Very flexible/agile with good capability for dynamic variation

Cooksey (1977c: 6)

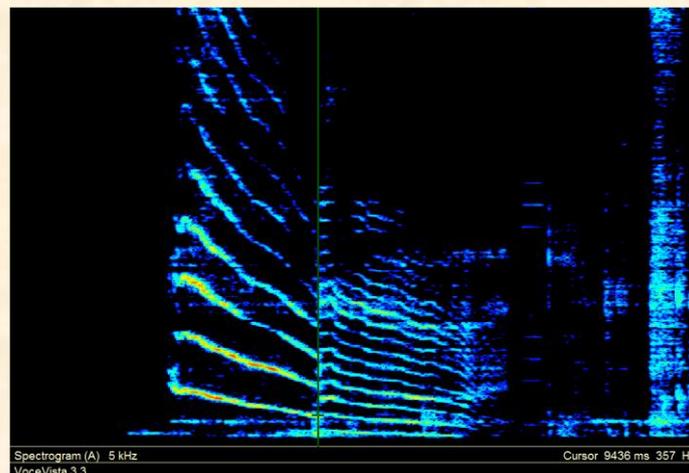
The Fuchs classifications are important because unless we refer to them, we cannot be sure that we are comparing like with like. Neither English choristers nor German Boysänger of institutions such as Thomanerchor compare directly with the subjects of Cooksey’s longitudinal study. As a general rule, the higher the “strain” on the voice, the greater will be its range and versatility, and the longer singing in a soprano range will be possible. An English cathedral treble would be D for “strain”, though anywhere between 1 and 3 for instruction. When first recruited to the study, Max was a member of a “greater parish church” choir, which sang one weekday choral evensong plus one or two Sunday choral services, with three rehearsals per week. The boys received no individual instruction. Whether

instruction by an organist with no qualification in singing constitutes “vocal training in a group” is a moot point, but we shall give the benefit of the doubt and classify Max as a C2.

The spectrogram reproduced below was taken from a downward vocal glide performed by Max during this period. The glide is from the highest sound he can make down to the point where he has reached his lowest stable phonation and a steady note at the bottom of the range is sung. Breath noise at the very top of the range (higher pitches than normally sung) is evidenced by the fuzzy pattern.



Two small passagio-like blips are evident (as might be expected) but as Cooksey predicted, there is no actual break in the spectral lines that would indicate an abrupt transition from one vocal mechanism to another. For those unfamiliar with the use of acoustic spectrography to analyse voices, the next diagram shows a similar exercise performed by an older cathedral chorister who is singing treble in falsetto. The spectral lines show unmistakably where the break from falsetto to modal voice occurs.



The continuous spectrum of the first diagram has been a consistent feature in all the treble voices I have assessed, up until the time when, as in the second spectrogram, the final phase of voice change sets in and the boy begins to speak in a baritone register.

The large table below summarises the key measurements made between the ages of 10:02 (122 months) and 16:00 (192 months) and is presented as the best way of showing a lot of information concisely. Ages are given in years and months. Yr refers to school year as defined by the 1988 Education Act that introduced the English National Curriculum. HI stands for height increment and WI for weight increment, in other words the monthly increase in height (cm) and weight (kg) between each successive measurement. These are critical values and from them is computed annual growth

rate, which allows the occurrence of growth spurts to be shown as the shaded columns. Normal childhood growth rate is 5-6cm and 2.5kg per annum respectively.⁶ Peak growth rates during adolescence are give as 10cm and 9kg pa.⁷ However, it would be highly unusual for such a rate to be sustained for a whole year. Max's growth rate computed as an annual rate for the periods when no spurt was evident was 5.8cm and 3kg per annum. Clear growth spurts in height are between 10:10 and 11:00 (8.4cm pa), 11:03 and 11:05 (11.6cm pa), 12:05 and 12:07 (12cm pa) and, most significantly 13:00 and 13:04 (14.9cm pa). Weight is a less reliable measure that can fluctuate up and down through factors other than pure growth. However, there were discernible spurts between 12:08 and 12:09 (12kg pa) and again, significantly between 13:01 and 13:04 (21kg pa). The slight tendency for weight spurts to follow height spurts has been found by other workers⁸. TS stands for Tanner Stage, which is an estimate based upon growth rate and voice deepening rate (SF0, see below).

In the vocal growth columns Rn stands for range and Tes for tessitura. Range is given as the lowest clearly phonated tone and the number of semitones above this that were sung comfortably. Absence of figures denotes no change. Tessitura is given as the mean pitch of the songs that were being rehearsed at the time (in Hz) supplemented by the key chosen to sing the tune of *Happy Birthday* with no starting note given. SF0I stands for the incremental fall in speaking voice average pitch (deepening rate). It will be seen that this is sometimes positive (indicating a rise in pitch between measurements) and that it can also fluctuate quite widely. The reliability of an SF0 measurement in isolation is clearly low and reasons for this formed part of the investigation. Mood, excitement level prior to the assessment, and respiratory health on the day were all found to play a part. The absolute SF0 values at the ends of critical periods are given in the next column, with significant periods of sustained deepening shaded blue/grey.

There can be little doubt that the main period of change was between 13:03 and 13:09 when a rapid and substantial drop in voice pitch immediately followed the greatest growth spurts of both height and weight. Although it is customary now to talk of "voice change" rather than "voice break", these data suggest that older ideas of voice break may not be as erroneous as advocates of developmental stages like to portray. This is directly reflected in the far-right column which shows choir membership. For his mature treble years, Max belonged to the National Youth Choir of Scotland's National Boys Choir (NBC), shown as blue shading. It will be seen that Max moved from the treble/alto NBC to the Changed Voices section of NYCOS at the same time as the major growth spurt. The earlier part of Max's career, up to age 11:10 was spent in the greater parish church choir. However, the church choirmaster was unhappy with Max's membership of the NBC. Feeling the need to make a choice, Max opted for the NBC but at the same time joined the RSCM Northern Cathedral singers (shaded light gold).

The period during which this happened coincided largely with Max's time in Y7, sometimes considered to be the "golden year" for a boy treble. However, it will be seen that a minor growth spurt occurred approximately mid-way through this time, resulting in a split between the RSCM choir on the one hand and the NBC and Max's solo recordings on the other. The light blue/grey shading from age 12:07 to 13:03 indicates that Max's singing voice is falling from treble to first cambiata or mean. This was recognized by the NBC who allocated him to second treble or alto parts, but not by the RSCM who "needed" him to sing first treble in falsetto. This divergence in practice between ecclesiastical and youth choirs is by no means unknown and sometimes a source of conflict between singing teachers and choir directors. It is all very well-illustrated in the solo recordings made by Max.

The most important developments during Max's career – from immature "treble" at ten to the early emergence of the new young adult voice at just sixteen are summarized in tabular form on the next two pages. It is a large and complex table, but nevertheless the easiest way to summarise and present

a considerable amount of information. Songs highlighted in olive green have been selected to represent the voice immediately after each successive growth spurt. This is a scientific criterion rather than an artistic selection based upon genre or a judgement of what might be Max's best performances. For anybody sufficiently interested, the entire collection of treble samples from age 10 to 13 is available as the *Monday Afternoons* CD.

Age	Yr	Physical Growth							Sample Recording	Choir
		HI	WI	TS	Rn	Tes	SFOI	SFO		
10:02	5	-	-	1	G3	A3 212.9		220		Church choir
10:03	5	+1	+1.5	1			+1			
10:04	5	+1	-1.5	1			+1		Panis Angelicus	
10:05	5	+3	+5	1	G3 24	G4	-23		The Ash Grove	
10:06	5/6	+2	+5				-5			
10:07	6	0	+1.5				-8			
10:08	6	+1	-1				-8			
10:09	6	+5	+1.5			E4	-6			
10:10	6	+9	+1				+41		Be Still	
10:11	6	+6	0				-10			
11:00	6	+6	-1				-9			
11:01	6	0	+1				+16			
11:02	6	+1	+5	1			-2		Always There	
11:03	6	+7	-1.5	1			-6			
11:04	6	+8	+1.5	1	G3 29	A4 455.7	-6		An Die Musik	
11:05	6	+1.4	+5	1			-2			
11:06	6/7	+3	0	1			-2	211		
11:07	7	+2	0	1		F4	+4			
11:08	7	+2	-5	1		E4	-7		Ee-Oh	
11:09	7	+6	+5	1/2	G3 30	E4	+7		Agnus Dei	
11:10	7	+5	0	1/2	G3 29	E4	-12		Ploughboy	
11:11	7	+4	+2	1/2	G3 28	D4	+22			NYCOS NBC
12:00	7	+7	0	1/2	G3 29	C4	-18	204	Aus alten Mar.	CNW
12:01	7	+3	+1	1/2	G3 29		+46			Cathedral Singers
12:02	7	+9	+1	2?	G3 30	D4/ Bb4	-45			
12:03	7	+4	-1	2?	G3 17	C4	+7		Blow the Wind	
12:04	7	+3	+1	2?	G3 24	D4	-15		Awake Us Lord	
12:05	7	+6	0	2	F3 26	D4 513.5	-8		How Beautiful/ Remember You	
12:06	7/8	+1.4	0	2	F#3 25	D4 459.8	+14		New Year Carol/ Joys Seven/ O Lovely Peace/ Come Again/	
12:07	8	+1	0	3	F#3 17	D4 476.4	+1	203	The Rose	
12:08	8	+0.3	+1	3	F3 23	C#4 408.2	0			
12:09	8	-0.3	+1		F3 17	C#4 402.1	-8		He Shall Feed	
12:10	8	+0.8	0		F3 16	C4 476.3	-5			
12:11	8	+0.5	+5		F3 25	C4 527.1	+8		In the Bleak Midwinter	

13:00	8	+1.6	-.5	2/3	F3 31	B3 395.2	=11				
13:01	8	+0.9	+2.5	3	Eb3 30	A#3 397.1	0				
13:02	8	+0.6	+2.5	3	E3 34	A#3 311.1	+6		Heidenrosen, Ich Halte,		
13:03	8	+1	0		Eb 34		-1	188	My Shepherd is/ Wise in F		
13:04	8	+2.1	+2		D3 26	F#4 +8	-12				
13:05	8	-0.2	0				-10				
13:06	9	+2.1	0				-7		Fields of Gold/ Love Will Find/ Ave Verum/ Tears in Heaven.		
13:07	9	0	+1				-5				
13:08	9	+1.1	+2	4			-18				
13:09	9	+1.6	0	4			-13	126	Come Again		
13:10	9	+0.1	0	4			-7				NYCOS Ch/Vcs
13:11	9	+1.6	+3	4			-2				
14:00	9	+0.7	0	4			-3		Das Wandern Linden Lea		
14:03	9	+1.03 ¹	+0.3				0				
14:06	10	+0.5	+0.7	5			-5	95			
14:09	10	+0.1	-0.3	5			+7				
15:00	10	+0.5	+1	5			+2				
15:03	10	+0.3	+0.7	5			+1				
15:06	11	+0.3	-0.3	5			0	105			
16:00	11	-		5					An Die Musik		

Cambiata and Mean

The term “treble” is almost ubiquitous for high voiced boys in England today, but as I have been at pains to point out, it is as well as being a somewhat generic and inaccurate term, but one way for boys to sing. In terms of pitch range, it is not synonymous with soprano, being closer to mezzo-soprano, but having its own specific ranges if defined as an historic term in relation to mean – the most common vocal part for boys for most of the golden age of choral polyphony. The term cambiata was devised by Irvine Cooper in response to his extensive empirical observations of boys’ actual ranges, which seldom match conventional SATB parts during the critical period of early adolescence. We have seen that the Bel Canto training method of D’Abrero was one method of dealing with this. Cooper’s cambiata system is another, though historically informed performance of Tudor polyphony is yet another that has much to commend it.

In this final section, I focus mainly on the young singer Dominic (“Inigo”) Byrne, who I selected relatively early on in my own career investigating boys’ voices as a near-perfect example of a cambiata voice. The CD *My World* was issued in 2006 and, though I have since worked with voices that have come close to Dominic’s, none has surpassed it. So, I still maintain that this CD is the reference exemplar of a cambiata voice. This creates an interesting dynamic with the citation of Wayne Newton by Don Collins who wrote

To describing the timbre, or vocal quality, of the cambiata voice, Cooper used the term “wooly.” He said cambiata voices are rich, undeniably masculine almost to the point of belligerency, and truly beautiful if the sound is controlled in volume and not permitted to become strident from sheer vocal

¹ Monthly rate derived from three monthly samples from this point onwards.

exuberance. A perfect example of this sound may be heard in the very early recordings of Wayne Newton, the popular singer of a few years back.⁹

Whether Cooper actually said this, or it was Collins I have hitherto been unable to establish beyond doubt, but either way, Newton seems to me an odd choice for he suffered from a pathologically delayed puberty. That fact alone has attracted the kind of social media comment that would not be helpful to boys struggling with vocal identity. His voice did not reach adult quality until well into his late twenties and it is difficult to be certain exactly what Cooper (or Collins) meant by “very early”. Newton performed from the age of six. In a TV interview he described voice change as beginning at the age of sixteen. His debut professional recording was *Danke Schoen*, made at the age of 21 and in a voice that, if heard blindly with no information about the singer, would certainly pass as a good *cambiata*. This may be what Cooper had in mind and it is the example I have included.

Here is some of what I wrote originally about Dominic during 2007 when we were working together on *Boys Keep Singing* (Dominic is featured in the film *Riding the Changes*). The pseudonym “Tom” was used in my monograph.

His work has been of particular interest for this study because of the way in which the changing voice has been so carefully matched to a changing repertoire linked to progression from boy to young man. “Tom” was aged fifteen when I interviewed him and had quite a significant portfolio of commercial recordings to his credit, including a solo album made at the age of fourteen. He had most recently recorded two commercial singles in a style that might be described as somewhere between the quasi rock and formulaic pop. At the time of interview, he was resting his voice during his GCSE year, pending venturing further into the rock style and a desired career in studio management or production. Significantly, his vocal development from cathedral chorister to potential rock star had been overseen by successful, commercial music producers who were undoubtedly expert at matching voice to style and targeting marketing accurately.

His fourteen-year-old voice is arguably the most enigmatic and perplexing in the entire study. It was almost invariably identified as female by peer audiences, yet at the same time, more experienced listeners were sometimes excited by a quality perceived as mysteriously and alluringly masculine. It is the voice that I personally would choose as a particularly effective use of the Stage 2 voice. Nevertheless, this quality was not perceived by the large majority of peer group listeners who simply thought it female and compared it unfavourably with a performance of the same song by Enya. Interestingly, some cathedral choristers appeared to perceive something of its enigmatic or alluring quality. One twelve-year-old at a prestigious cathedral who successfully identified it as male was moved to say simply “because it was lovely”.

Tom’s fifteen-year-old voice, however, which had changed from Stage 2 to Stage 3/4 was quite different. Possessing, perhaps, something of the “belligerently” masculine quality described by Cooper (see Chapter Four), it was identified as male by 100% of listeners and the performance was rated as easily the “coolest” of all the young singers presented in the study. Listeners who were played recordings made at ages 13, 14 and 15 were simply incredulous that it could be the same voice. . . .

Tom’s voice had been highly valued by the organist at his cathedral who also commented on its unusual tone and power, whilst adding comments about how hard he’d worked to bring the sound into the head. In his view, the singing coach who’d taken him on had destroyed all this investment and good work by taking the voice back down to the chest. Tom was aware of this controversy and the special nature of his treble voice, though very modest about it.

Tom has been fortunate in that his voice has gone through Stages 1 – 4 without actually “breaking”. It has simply metamorphosed in pitch and quality. . . Tom himself used the term “breaking” whilst at the same time describing accurately the change or metamorphosis I had identified:

“Yeah! When my voice was breaking [sic] I didn’t really notice it breaking, like some boys maybe...they can feel it ‘cos when they sing they crackle. When I sing, when I’ve sung when my voice was breaking I could sing the notes perfectly, all the notes, that, that, there was a decreasing range I suppose.”¹⁰

The conflict between cathedral organist and London vocal coach referred to here was but the first of several similar spats that passed my desk over the subsequent years. The organist’s use of the terms “head” and “chest” is probably not helpful. These are subjective perceptions of voice that I have found bear at best only a passing resemblance to anything that can be investigated scientifically. What is more significant is the similarity with the approach used for Louis -taking the whole voice gently down in pitch (or key) to match the perceptible “slight deepening” that characterizes the early stages of puberty. This, in my view, produces a smooth and refined *cambiata* timbre, as I have already mentioned in referring to the Winchester College *cambiata* boys – many of whom are similarly ex-choristers. The resulting timbre differs from what some would call “speech voice” singing in similarly aged boys who have had little previous training. Whilst the term “more refined” is probably justified, I have avoided the use of any more judgemental subjective, not least in deference to Benjamin Britten’s preference for *ragazzi*.¹¹ Also of note is the managed identity change from cathedral chorister through formulaic “pop” to aspirational “rock” singer. That, it must be said in passing, is relatively unusual. It is more common for ex-choristers to retain an interest in either “classical” or at least more eclectic repertoire and identity, but Dominic was never wholly devoted to his cathedral music.

Dominic’s early dilemma with cathedral singing came with four pieces recorded with the Prague Symphony orchestra (that is another story) in 2003 when he was aged eleven. *Thank You Mum* is clearly an unchanged voice, though whether it should be called “treble” would probably be a topic for social media pundits to argue about. The range is Bb3 – Eb4 and we can be reasonably confident that this was *not* the “sound in the head” that the cathedral music director had worked hard to achieve. The significance is that Dominic always had a leaning to showmanship and other genres. The cathedral choir, with all its demands, was but one part of his life. I have selected two pieces from the classic *cambiata* album, recorded at the end of 2005 and released in 2006 when Dominic was 14. *May it Be* best exemplifies the quality I have referred to as “enigmatic” and was used in the perceptual tests with secondary school pupils. Mozart’s well-known *Ave Verum* shows how, for *cambiata*, a soprano line must be taken down to a lower key, thus rendering the piece unsuitable for a choir to sing (choir key, D major, D4 – E5; *cambiata* key, down a fourth to A major, A3 – B4).

Finally, for those that can bear with a formulaic pop song almost cynical in its degree of blatant image making and marketing, *This Week’s No. 1* is one of the most interesting voice samples in the database. Recorded some nine months later than the *My World* album, the main change is timbral rather than pitch. The “boyish” low treble timbre of *May it Be* has gone, replaced by the more “young man-like” emerging baritone timbre. Yet the tessitura is little altered (Ab3 – Bb4 in the earlier recording, G3 – G4 in the later). Although the top note has come down a minor third, the bottom note is only a semitone lower. That the *timbral* change has perceptual significance can be little doubted, given the number of peer group listeners who thought *May it Be* to be a female voice when all identified *This Week’s No. 1* as male. *This Week’s No.1* is still a *cambiata* voice, but with altered timbre. However trivial the song, there has been skilled vocal coaching here. The change from “boyish” *cambiata* timbre to “young man” *cambiata* timbre might similarly be noted in Max’s recordings of *Love Will Find* (age 162 months) and *Come Again* (age 165 months).

I referred earlier to Benjamin Britten and the *ragazzo* sound. That Britten had some disdain for what was, in his day, the “emasculated flutiness” of what was at the time regarded as the “traditional English treble” is well documented. How far one should veer in the other direction of the laddish or *ragazzo* sound of “real boys” is, before any other consideration, a subjective question of culture and

taste. Cultivated versions of ragazzo sound over the years have included the celebrated Wandsworth School Choir, directed by Russell Burgess, and Westminster Cathedral under George Malcolm. Britten wrote for both and was a patron of the Wandsworth choir. Unfortunately, a tremendous amount of opinion about so-called “continental tone” has followed in the wake of these choirs, and this has been accompanied by much speculative writing about “chest voice”, little of it substantiated by any serious scientific investigation.

After devoting many hours to this topic, I have reached a conclusion that there is, as Jenevora Williams has declared, simply “good singing and bad singing”. ABCD’s Cambiata North West choir has produced a fair share of both, as well as four boys for longitudinal study. The significance of choirs such as this is that boys are not trained to access their top register. This part of the voice is not required for a cambiata choir, though boys on the first cambiata part share a bottom note with trebles, at least to begin with (A3). The resulting characteristic CNW sound is undoubtedly ragazzo. Some people would call it “chest voice” singing, others “speech voice”, yet others “modal”. The solo performances of thirteen- year-old George Powsland during the choir’s concerts brought much acclaim. If that can be considered a criterion of “good singing”, then so be it. George was studied longitudinally with all requisite physical and vocal measurements, and I made a sample recording with him when he was at the same phase as Dominic during the *My World* recording. It is perhaps the nearest that can be got to the measurements that were never made of Dominic and the result is most interesting. The key is A major, and the range of a sixth, from A3 – F#4, is ideal for the first stage of cambiata. Electroglottogram plots and spectrographs of ascending and descending scales between C4 and C5 show characteristics of a modal voice on C4 and a falsetto voice on C5. The transition between the characteristic patterns is gradual and continuous. There is no obvious break. There is not the space here to discuss this further though I continue to work on the reasoning behind my position that what we have here is better described as “good singing” than by the no more scientific term “chest voice”. The scientific paper will follow. Here, I just present the sample recording with the thought that similar spectrography/electroglottography tests of scales and vocalizes with Dominic might have produced similar results.

¹ About Bernard d'Abrera, *Hill House Publishers* (archived from April 17, 2015).

² [John Tennent remembers Bernard Laurance D'Abrera \(latterly d'Abrera\), 28th August 1940 – 13th January 2017](#) by John Tennent (2017) *Entomological Society of Queensland News Bulletin* 44(9). via *The Insect Collectors' Forum* (archived from August 9, 2019).

³ "Bel Canto: Definition, Style & Technique." Study.com. June 7, 2018. <https://study.com/academy/lesson/bel-canto-definition-style-technique.html>.

⁴ Kenneth Phillips (2013) *Teaching Kids to Sing*, 2nd ed., Boston MA: Schirmer, pp 92-93.

⁵ Fuchs, M. Meuret, S., Thiel, S., Taschner, R., Dietz, A. and Gelbrich, G. (2009) Influence of singing activity, age, and sex on voice performance parameters, on subjects' perception and use of their voice in childhood and adolescence, *Journal of Voice*, 23(2): 182-189.

⁶ Cole, T., Pan, H. and Butler, G. (2014) A mixed effects model to estimate timing and intensity of pubertal growth from height and secondary sexual characteristics, *Annals of Human Biology*, 41(1): 76-83.

⁷ Rogol, A., Clark, P. and Roemmich, J. (2000) Growth and pubertal development in children and adolescents: effects of diet and physical activity, *American Journal of Clinical Nutrition*, 72(suppl):521S–8S

⁸ Willis, E. and Kenny, D. (2008) Relationship between weight, speaking fundamental frequency, and the appearance of phonational gaps in the adolescent male changing voice. *Journal of Voice*, 22(4):451-71.

⁹ Collins, D. (undated) *Tenets of the Cambiata Concept*, Cambiata Vocal Institute of America.

¹⁰ Ashley, M. (2008) *Teaching Singing to Boys and Teenagers: the young male voice and the problem of masculinity*. Lewiston NY: Mellen. Pp194-195.

¹¹ Coyle, J. (2020) Boys' voices, lads' voices, Benjamin Britten and the ragazzo sound. *ABCD Choral Directions Research*, 1: 71-93.