

The Decline of the Traditional Church Choir: The Impact on the Church and Society

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Introduction

Although Christianity is growing in most parts of the world, its mainstream denominations are in decline in the UK. It is clear from a recent report [1] that although there are many reasons for this decline, there is a commonly held view that one of the most significant of these reasons is that the leaders of the Church in the UK pay insufficient attention to explaining the fundamental tenets of the Faith; in other words, ‘apologetics’ plays too small a part in the life of the Church. It is claimed that two thirds of the population actually believe in God but remain disinterested in the Church. The report states that thousands of replies to the survey on which it is based are critical of the way in which church services are conducted, and that although traditional liturgies are being abandoned, new liturgies have alienated older generations but have failed to appeal to younger people.

These two criticisms, the one concerning apologetics, the other liturgy, are related in that both require a measure of intellectual effort. Moreover, if instruction of young people in the Christian faith never rises beyond the simplistic, it is hardly surprising that they find the Church a boring irrelevance. A group of young people that at one time proved to be exceptions to this rule were choirboys, now alas an almost extinct species. The purpose of this report is to present an analysis of the decline in the number of choirboys in Anglican parish-church choirs in the UK, the results obtained from the analysis, and the conclusions that may reasonably be drawn from them.

Data analysis

The available data is in the form of numbers obtained from either the press [2] or through surveys [3, 4] made by members of the *Campaign for the Defence of the Traditional Cathedral Choir* [5]. The analysis is based on the well-known logistic formula [6] adapted to deal with a decay process rather than one of growth. Having formulated the problem in these terms and solved the resulting analytical equations, the final part of the report deals with the probable impact on both Church and society of the decline in the number of choirboys that has occurred to date.

As a starting point in analysing the data, we make the following *assumptions* concerning the mechanism(s) underlying the fall in the number of choirboys in Anglican parish-church choirs in the UK (denoted in what follows by $n(t)$, i.e. the number of boys expressed as a function of time).

1. The factor(s) causing the decline began to take effect sometime after WW2.
2. There would have been a roughly constant number (denoted by n_0) of choirboys *in the absence of these factors* since the number of churches and the mean number of boys per choir would have been approximately constant.

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3. Although there may have been a number of factors at work, their combined effect is *eventually* to cause a rate of loss in the number of boys which is proportional to the actual number at any given time. (This assumption recognizes the simple fact that as the number of boys falls, so must the rate; it is mathematically equivalent to the ‘law’ governing radioactive decay and indeed many other naturally occurring growth or decay processes.)

4. The ‘constant’ of proportionality is a factor that is initially zero but tends to a constant value (denoted by κ) as the process of decay progresses. (The point of this assumption is that in the early stages of the decay process, it seems likely that there was some degree of inertia which tended to preserve the *status quo*. Many churches would have had strong musical leadership so that every effort would have been made to preserve the tradition; the decay process might therefore have been delayed until the individuals moved on. Other churches would have more promptly adopted a liturgical style that was musically undemanding and therefore less likely to appeal to serious church musicians.)

Before reporting results that have been obtained by a more elaborate analysis (as described in the Appendix), it is worthwhile looking at an approximate method for estimating the order of magnitude of the number of men in the UK who, as a result of the decline in the number of choirboys, would not have been choirboys themselves. If the ‘lifetime’ of a choirboy is denoted by τ , then the rate of admission at some time t is given by $n(t)/\tau$. The rationale behind this assertion is that the number of boys in their first year in a choir, assuming they all join at roughly the same age, is also $n(t)/\tau$. In a year, this group of boys will all age by one year. If we regard one year as a relatively short period of time, then in that year the group that have thus aged will be replaced by a very nearly equal number of new arrivals. By a ‘short’ time, we mean short compared with the time required for any significant change in the total number $n(t)$ of boys to occur. It then follows that the rate of admission of new boys per year will be given by $n(t)/\tau$. However, had there been no ongoing fall in new admissions, the rate of admission of new boys would have been given by n_0/τ . The difference between these two rates, $[n_0 - n(t)]/\tau$, must therefore equal the rate at which boys are no longer joining church choirs. These boys become a sizeable group of men in society at large, men *who would have become choristers* and would have had at the very least a passing acquaintance with Christianity, its values and its traditions. This male-chorister ‘deficit’ in any particular year will be denoted by $N(t)$.

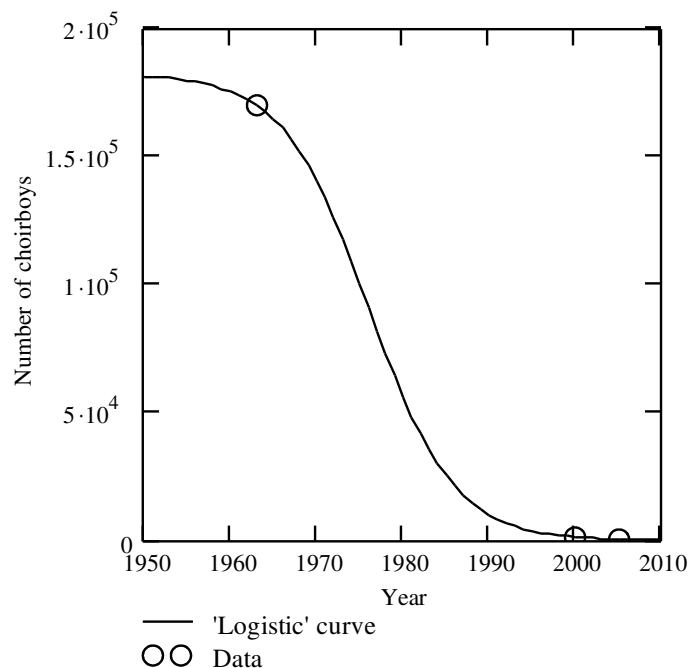


Figure 1. Choirboy number in Anglican parish-church choirs plotted as a function of year; the continuous line is the 'logistic' curve based on eq.2 of the Appendix taking the optimal value of n_0 to be 182,000.

Estimate of the male-chorister deficit

To estimate $N(t)$, we can assume that at some particular time, suggested by the data and denoted by t' , the number of choirboys rapidly fell from n_0 to a negligibly small value so that beyond this critical time $n(t)$ is effectively zero. The total number $N(t)$ is then given by the expression $[n_0 - n(t)] \cdot [t - t'] / \tau$ which tends to the value $n_0 \cdot [t - t'] / \tau$ if $n(t)$ is negligible. As shown in the Appendix, n_0 is about 182,000; the logistic curve shown in figure 1 indicates that the critical date t' can be taken to be about 1975. If the lifetime of a choirboy is taken to be from nine to fourteen years, τ is five years. We then have that N equals $182,000 \times [t - 1975] / 5$ so that at the present time, i.e. when t is 2005, N equals $182,000 \times [2005 - 1975] / 5$ or 1,092,000. As such a large number of men would hardly have had a negligible sociological effect, it is necessary to ensure that this estimate is reasonably accurate. A more elaborate calculation (as shown in the Appendix) gives much the same result and enables us to plot a graph of the deficit as it varies with time; this graph is shown in Figure 2, which includes the logistic curve for comparison. For the year 2029, the end of the choirboy era, the deficit N is given by $182,000 \times [2029 - 1975] / 5$ or 1,965,600. The more accurate figures for the deficit as it stands at present and as it is predicted to be in the year 2029 are **1,061,000** and **1,934,000**, respectively.

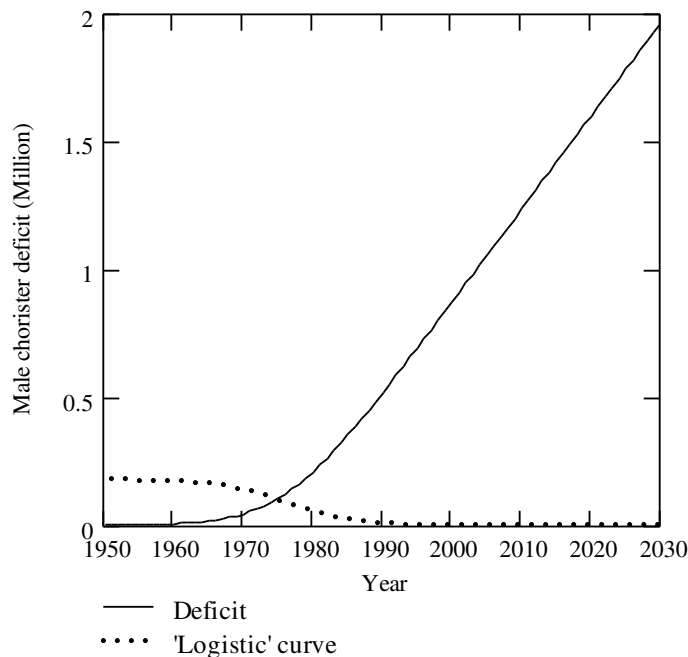


Figure 2. Graph against time of the number of men in the UK who would have been members of Anglican parish-church choirs - the male-chorister deficit - had social changes not occurred; the logistic curve shown in figure 1 is included for comparison.

Conclusion

The sociological impact of over a million men in the UK having had little or no contact with the Anglican Church can hardly be regarded as negligible. That this figure is steadily rising is even more worrying. But the impact on the Church of England itself of losing even a relatively small fraction of a million men could be little short of catastrophic. There are two reasons for this assertion, the most obvious being that the fraction of the present total membership of the Church represented by the true figure, whatever it may be, is probably significantly higher than the corresponding fraction for the general population. The second reason is that of the men that have been lost to the Church, many would have continued to play a role in the Church. Not only would some have remained choristers but some would have become organists and choirmasters, others priests. Again, many of these men might reasonably be expected to have been a little more attuned to their responsibilities as fathers compared with the actual attitudes and behaviour of so many men today. Not only might they have encouraged their own sons into church membership, especially as choristers, but they might also have helped to prevent the gradual slide into immorality that beset the UK in the latter part of the twentieth century.

From the facts and the analysis based on them, there can be little doubt that the future of the Church of England in its traditional form has already been seriously compromised by this loss of men, quite apart from the concomitants of this loss. It is also abundantly clear that the scale of the problem has not been recognized. In the recently published Ecumenical Research Committee Report [1] addressing the reasons for the decline in church-going in Britain and Ireland, the views of 14,000 people are summarized but there is no mention whatever of church choirs or the impact of the near-total destruction of the traditional Anglican all-male choir.

References

1. Church Survey Report, *Let the People Speak*, Ed. The Rev'd J.M.A. Willans, 2005, The Ecumenical Research Committee, Surrey; www.churchsurvey.co.uk
2. B. Haunch, Private Communication, *More Female Voices in the Parish Choir*, (An article believed to have appeared in *The Times* about 1963).
3. T. Saunders, Private Communication, *Church of England and Roman Catholic Parish Churches, Cathedrals, Peculiarities and Schools in England with Boys' and Mens' Choirs*, last revised May, 2000.
4. D.C.E. Watson, Private Communication, *Traditional Choirs of Men and Boys in Cathedrals, Churches, Colleges and Chapels in the United Kingdom and Ireland*, last revised January 2005.
5. *Campaign for the Defence of the Traditional Cathedral Choir*, London; www.ctcc.org.uk

6. H.T.Davis, *Introduction to Nonlinear Differential and Integral Equations*, Dover, New York, 1962, p.96.

7. *Mathcad 11: Users' Guide*, Mathsoft Engineering and Education, Inc., Cambridge, USA, 2002.

Appendix

The simplest expression for the 'constant' of proportionality mentioned in the text, i.e., one that is initially zero and tends to the constant value κ , is $\kappa(1 - n/n_0)$. When n is equal to n_0 , the expression $\kappa(1 - n/n_0)$ is zero; as time passes, and n tends to become small compared with n_0 , $\kappa(1 - n/n_0)$ tends to the constant value κ . The differential equation governing the decay process then takes the form

$$dn/dt = -\kappa(1 - n/n_0).n \quad (1)$$

in which dn/dt is the rate of change of n with time t expressed in years. The solution to this equation is

$$n(t) = n_0. [\{ (n_0/n_1) - 1 \} . \exp\{ \kappa(t - t_1) \} + 1]^{-1} \quad (2)$$

in which n_1 is the number of boys in the year denoted by t_1 .

The reason for expressing the equation for $n(t)$ in this form is that there is uncertainty about the exact date of the inception of the decline process. It may well be that this date is in fact indeterminate and that, in a strict mathematical sense, there is no such date. All that can be said with any certainty is that after WW2 and before 1963, a relatively stable state existed in which whatever change had been occurring was at a much lower rate than it became subsequently.

Taking n_1 to be 170,000 in the year 1963 [1], we wish to find the numerical values of the parameters n_0 and κ in the expression for $n(t)$, eq.2, so that the curve thus obtained is the best fit to the remaining data. The surveys [2,3] carried out in the years 2000 and 2005 gave the numbers of Anglican parish churches having traditional all-male choirs as 86 and 71, respectively. Assuming the mean number of boys per choir to be 10, we can then reasonably take the total numbers of boys to be approximately 860 and 710, for the two years respectively. Using commercially available computer software [7] to plot a graph of $n(t)$ vs t , we can then adjust the values of the two parameters so as to 'pivot' the curve about the point (1963, 170,000) and hence obtain the best fit of the curve to the data for the years 2000 and 2005. We then find that the numerical values of n_0 and κ are 182,000 and 0.2064 yr^{-1} , respectively. In other words, to deal with the indeterminacy of the inception date and the general dearth of data, it was felt that the curve fitting should be made to depend most critically on the value of n_1 , particularly as the error in this figure is probably less significant than that in the other two sets of data.

The final part of the analysis is to calculate the total number of boys who would have become choristers but because of changing conditions failed to do so. Earlier, we referred to this number as the male-chorister deficit. If we denote the number of such boys at some particular time t by $N(t)$, then N will be the solution to the equation

$$dN/dt = [n_0 - n(t)]/\tau \quad (3)$$

in which, as before, dN/dt is the rate of change of N . From eq.2, we can express this last equation as

$$dN/dt = (n_0/\tau). [1 + (n_0/n_1 - 1)^{-1} \cdot \exp\{-\kappa(t - t_1)\}]^{-1} \quad (4)$$

the solution to which can be shown to be

$$N(t) = (n_0/\kappa\tau) \cdot \ln[(n_0/n_1 - 1) \cdot \exp\{\kappa(t - t_1)\} + 1] \quad (5)$$

We already know the numerical value of n_1 and have found values for κ and n_0 ; we can therefore evaluate the expression for N in eq.5 and plot the results. Before doing so, however, we can check the correctness of eq.5 by examining what happens for long times after the start of the decay process. In such cases, the first term in square brackets is much larger than unity; it can then be easily shown that

$$N(t) \sim n_0(t - t_1)/\tau + (n_0/\kappa\tau) \ln[(n_0/n_1 - 1)] \quad (6)$$

The second term on the RHS of this equation is a constant ($-468,410$) but the first term indicates that N increases linearly with time, exactly as expected once the number of choirboys becomes negligible compared with n_0 . Approximate values for N can now be easily calculated using eq.6. At the present time (2005), the approximate value of N calculated in this way is found to be 1,060,390 (given by $1,528,800 - 468,410$). The corresponding figure obtained by evaluating eq.5 is 1,060,827 or, to a sufficient degree of precision, **1,061,000**.

Similarly, we can obtain corresponding figures for the year 2029 which is when those boys who were the youngest members of choirs in 1963 reach roughly the age of life expectancy for men, for the sake of argument taken to be 75. There is therefore little point in calculating N for years beyond 2029. For this particular year, the approximate value for N is found to be 1,933,990 (given by $2,402,400 - 468,410$) whereas the figure obtained by evaluating eq.5 is almost exactly the same and can be written with sufficient precision as **1,934,000**.

To summarize, we may say that today there are about **a million** men in the general population of the UK who would have had the experience of being choirboys in Anglican parish-church choirs had the decay process not occurred. The corresponding figure for the year 2029, roughly the end of the choirboy era, is just under **two million**. The full picture is shown in figure 2.

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Peer Review

In view of this article's complex nature, it was decided to submit it for peer review. CTCC is grateful to Dr Robin Jenkin for undertaking this task. CTCC also wishes to express its appreciation to him for allowing the convention of peer review anonymity to be disregarded on this occasion.

Review of 'The Decline of the Traditional Church Choir: The Impact on the Church and Society' by Dr A. Saunders'

Dr Robin Jenkin, BSc (Hons), MRes, ARPS, AIS

In my capacity as a research scientist and university lecturer I was invited to form an independent opinion on the mathematical analysis performed by Dr Saunders. I have read the work and corresponding derivations with a great deal of interest. Often comments and views regarding society, politics and the church are generalised and expressed without any attempt to analyse historical data. In this respect Dr Saunders' paper should be noted for his approach to the subject alone.

The derivations of the equations offered by Dr Saunders are mathematically correct. For those not so familiar with the vagaries of statistics, however, I offer one or two further comments to form a holistic view with which people may choose to add weight or not to the findings.

The amount of historical data available to Dr Saunders was limited. Generally, more weight is given to results as the amount of data available for statistical analysis increases. Further data in this case could agree or disagree with the results. The statistical model and decay coefficient chosen by Dr Saunders is one of a large array that are available to mathematicians. Additional data may show that another model is more appropriate.

The above points aside, if the male-chorister deficit calculated for the present day and 2029 was shown to be over-estimated, by a factor of two per se, the numbers would still be significant at approximately 500,000 and 1 million respectively. In my opinion an error of this magnitude would be unlikely unless the decline in male-choristers could be proven to have started much later than suggested. In addition, Dr Saunders has made assumptions that bias the analysis to yield an underestimate of the deficit, in particular that the decline started after WWII and that a male-chorister serves a full five years. Therefore, I feel that the conclusions that Dr Saunders draws from the analysis are fair and would not change with additional data or a change in model.

Dr Jenkin is the Executive Editor of 'The Imaging Science Journal' and a lecturer in Electro-Optics at Cranfield University.