

NEW TECHNOLOGIES, NEW WAYS

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Background

Technical change has had a very profound effect on worship practice over the centuries. The development of building techniques is an obvious example, allowing large, weather-proof spaces to be made for significant numbers of worshippers to come together. The use of glass on a much wider scale made spaces lighter, and techniques of producing coloured glass, and of painting it with durable pigments led to the widespread use of stained glass. Mechanical methods of sawing timber made larger roofs practicable and affordable. They also led eventually to the widespread introduction of pews. The use of slates instead of stone slabs made roofs of wider span possible. In the 19th century, the use of cast-iron columns, instead of stone piers, to support roofs and galleries gave better sight lines. Environmental control was another area where technical change was influential. The development of improved oil lamps, then of gas and finally of electric lighting made it possible to hold services at times, or in conditions, in which natural light was inadequate. The invention of printing made it possible to multiply copies of the Bible, and later of psalm and hymn books, and the invention of the paper machine in the early 19th century made all printed material much cheaper.

19th century technologies

Pipe organs are, of course, much older than the 19th century, but it was not until the second half of the 19th century that they became accepted fittings in Presbyterian churches. They were often inserted into existing churches, and given pride of place, often at the rear of the chancel. Display pipes and ornate organ cases were features of many organs. The invention of hydraulic motors for blowing (replacing hand blowing) allowed very large organs to be built. In the late 19th century, electric motors displaced hydraulic motors, and electric and electropneumatic actions further increased both the power and complexity of organs. We are so used to the appearance of pipe organs in our churches that we filter them out of our appreciation of their interior, and fail to realise that the widespread introduction of organs was as revolutionary as the use of praise bands is in our own day. The introduction of organs was accompanied by that

of choirs, and especially choirs singing from the front of the worship space. For churches which could not afford pipe organs, mass-produced reed organs – harmoniums and American organs – became fairly readily available, and were widely used in such churches. They required less expertise to play than pipe organs, which also often suited smaller congregations.

Another later 19th century technology with an important impact was central heating, which made churches more comfortable, altering the character of worship.

In the first half of the 20th century, it became possible to amplify sound using fixed microphones and loudspeakers. This was an aid to people with impaired hearing, and also reduced the importance of the development of voice production in ministerial training. The development of electrical sound technology also led to the introduction of hearing aids, both individually owned, and wired into churches. In the middle of the 20th century, electric organs began to displace both pipe organs and reed organs. Early electric instruments gave a poor imitation of pipe organ tone, and sounded distinctly artificial. More recent instruments sound much more like their pipe counterparts.

I have selected some of what I believe to have been key technical changes which have affected worship practice since the middle ages. The list is not exhaustive, but may serve to make the point that technical change of one kind or another has been important, and at times critical, in influencing both the context of public worship, and indeed worship practice. The treatment in this introduction has been deliberately ‘broad brush’, as a background to a more detailed examination, and critique, of more recent developments. What follows is based largely on my experience with the Church of Scotland’s Committee on Artistic Matters and its successor, the Committee on Church Art and Architecture (CARTA), and also in dealing with New Charge Development. Though at the time of writing I am Convener of CARTA, the views I am expressing here are essentially personal, and should be construed as such.

Recent developments affecting the design of worship spaces include: various provisions for people with physical disabilities; the use of radio microphones; the recording of services; ‘karaoke’ hymn accompaniment; the introduction of amplified praise bands; and the increased use and sophistication of audio-

visual systems. As in the introduction, this is not an exhaustive list, but it comprehends most of the types of 'new technology' applications which come to CARTA. For the sake of clarity, I will split the ensuing discussion into headed sections.

Provision for people with physical disabilities

It has been one of the greatest achievements of the Church during the past decade to embrace so wholeheartedly the proposition that people with physical and to some extent learning difficulties should be given full access to worship. In the context of this paper, there are three important classes of modification to church buildings for people with physical disabilities which can be considered technical changes. These are: provision of ramped access to and inside buildings; provision of special sanitary facilities for disabled people; and the fitting of loop systems to allow people with hearing aids to hear better. The last-named innovation has minimal impact on building fabric.

The provision of special sanitary facilities has usually been accomplished without significant impact on the character of worship spaces. One proposal was, however, to create these in a chancel, moving the Communion table to the front of the new facilities! In another case, a free-standing facility was placed in the choir, but in an aisle screened from normal viewing. This has apparently proved entirely acceptable. It should be borne in mind that discreet provision of sanitary facilities is important not only to people with problems of mobility.

The installation of ramps poses more aesthetic problems, especially outside churches. It can be very difficult to install these in a manner sympathetic to the building. This problem, however, lies outside the brief for this paper, though I would contend that the approach to the place of worship is a preparation for the act of worship, and that therefore the visual qualities of the transition from the secular world to the 'sacred space' are of considerable importance. Internally, the visual impact of ramps is generally less of a problem. It seems to me that it is in the interests of all worshippers that the design of the worship space should be as seemly as possible.

Because there is an important moral, as well as legal, principle involved in providing for disabled people, it is often necessary to accept compromises

in treating worship spaces and church exteriors which would otherwise be difficult to countenance.

Radio microphones

The development of easily portable radio microphones has allowed ministers and other leaders of worship to move around without losing audibility. This technology allows the minister to remain audible when out of the pulpit – for example, when talking to children, conducting a baptism or wedding, or presiding at Communion. If operated with a loop system, it allows people with impaired hearing to participate effectively in worship.

This technology encourages ministers to wander around during worship, which has the advantage of creating an atmosphere of informality. It can, however, be distracting to worshippers, and can reduce the effectiveness of engaging with worshippers, both as a body and as individuals. It can lead to demands to remove pulpits, which are often central elements in the design of worship spaces, with significant symbolic purpose, especially in churches of the Reformed tradition. The visibility of the preacher, as well as his audibility, is an aid to communication and the removal of pulpits can seriously distract worshippers from effectively participating in worship. It also limits the options open to successor ministers.

‘Karaoke’ hymn accompaniment

The use of pre-recorded hymn tunes allows a congregation to sing without an organ, piano or other instrumental accompaniment. It is an aid to keeping time, and pitch, in congregational singing, but has significant adverse effects. Changes in tempo, pitch, and expression are impossible, and the elimination of the personal involvement of an accompanist inevitably leads to a somewhat mechanical effect – a loss of authenticity. I remain to be convinced that this type of accompaniment is preferable to unaccompanied singing.

Amplified praise bands

The praise band has a distinguished history. The Book of Psalms refers to a range of instruments used in worship in Old Testament times and, though evidence

for the use of instrumental accompaniment in post-Reformation worship is scanty, other branches of the Church used instruments to accompany worship until pipe organs became common. The modern praise band is a relatively recent innovation, and in most cases involves the use of electrically-amplified instruments, such as electric guitars and electronic keyboards. Other instruments may also be amplified. In some instances, the sounds are 'mixed' at a control desk before being broadcast to the congregation. In some instances, praise bands are used to accompany congregational singing; in others, they perform pieces on their own.

There are now several generations of people whose musical tastes and knowledge have been formed by the recorded sound of popular music of a wide range of genres. Songs and instrumental music in such popular styles are associated with important stages in people's lives, and particular songs can have serious meaning to many people. The style of such songs, and in particular their orchestration and structure, are capable of conveying meaning which is transferable to a worship context. The proportion of worshippers to which these modes of musical expression are meaningful is increasing all the time. 'Gospel Rock', though very difficult to define, has become a sub-species of popular music in its own right.

Praise bands performing such music have considerable merits. Perhaps most obviously, they allow younger people to participate actively in worship, in a manner which gives them a place in congregational life, which establishes confidence and an adequate level of self-esteem. Secondly, they give non-traditional music a place in worship, in what can be a very stimulating, and indeed enriching, way. And thirdly, they can introduce variety into worship, in a way that demands attention.

On the other hand, they can have less attractive aspects. They can emphasise performance rather than participation. This disadvantage is not unique to praise bands; solo and choir singing, and organ solos, are sometimes open to the same criticism. Perhaps more importantly, they can be visually intrusive, with large loudspeakers, trailing cables, and a general air of untidiness which suggests carelessness. The abandoned paraphernalia of a praise band, after services are over, can be very distracting. Praise bands, too, can be distractingly loud. If the degree of amplification is excessive, the sound level can reach the

threshold of pain, and even below that level it can be very uncomfortable. In some instances, the praise band can appear to dominate or even displace the Communion Table, font, pulpit and lectern as the visual focal points in the worship space, giving it a position at the centre of, rather than an integral part of, the act of worship.

Despite these reservations, my view, based on experience, is that a good praise band can inspire, uplift and enrich an act of worship, and allow people who might otherwise feel excluded or uncomfortable to make a positive contribution to worship. Though there is a place for services in which all the music is in 'rock' style, I believe that an integration of 'rock' songs and hymns with other styles of musical expression has much to commend it. It may be that discussion and explanation of the merits and intentions of different musical styles would be valuable both to innovators and to traditionalists.

Audio-visual systems

The first widely used visual system was the 'Magic Lantern', popular in Victorian times. I do not know whether such devices were ever used in public worship, but they were certainly used in Sunday Schools. In the late 20th century, the overhead projector came into use, with transparencies projected on to a portable screen. This device was used by some churches to project the words of hymns. The modern successor to the overhead projector is the computer-linked data-projector, though some churches use television monitors instead of reflective screens. Most churches which use these systems employ them to project the words of hymns and songs. Some use them for scripture readings, and for headings of sermons. Another use is for 'mood images', of scenery, waves, clouds, beautiful people. Documentary images may also be shown to complement sermons or talks. A recent application is to use a video camera to allow the congregation to see what is going on in a baptism, or, for instance, a nativity play. The words and images are normally controlled from a central point.

There is an increasing demand for fixed screens, or permanently-sited retractable screens. The technological approaches are very variable. The most cost-effective system is one with a plain reflective screen, activated from above. 'Pop-up' screens have a bulkier case, and are significantly more expensive than 'drop-

down' screens. Normal 'picture-tube' television sets are too small to be clearly visible at a distance. Large plasma screens are better, but are very expensive, and have a short life (said to be 4-5 years).

The principal arguments in favour of the use of projection can be stated as follows. People singing while looking up at a screen are in a better posture for voice production. The selective use of images can be stimulating. The ability to make, for instance, baptisms visible to the whole congregation is, in principle, worthwhile. There is, as with magic lanterns, a useful role for such systems in education and in provoking discussion.

Having been at many acts of worship where projection has been used, I believe that, unless very carefully considered, the practice has significant disadvantages. There is a real risk of it being introduced simply as a fashion, without a thoughtful appraisal of its merits and demerits.

In my view, the disadvantages of the concept are, in no particular order, as follows. In general terms, it discriminates against some people with visual disabilities. People with developing cataracts, and others with non-correctable long-sight defects, can be unable to read words on a screen, though they could read words in a hymn book or service paper. More particularly, in projecting the words of hymns and songs, they are generally split into what are often relatively meaningless pieces, with no relationship to the piece as a whole. Hymns and songs are composed as complete works, and the whole is definitely greater than the sum of its parts. Of only slightly less importance, splitting up gives the viewer no indication of the length of a hymn or song, or of changes in mood within the text. The absence of information about the author, or about when he or she lived (the context within which the work was written) also devalues the information provided.

Where passages of scripture are projected, they are seen in isolation: the context disappears. Understanding of a particular passage is, generally, to a large extent contingent on context, so this is a significant consideration.

Another reservation I have relates to the use of mood-setting non-verbal film clips, depicting beautiful people against beautiful scenery. The overtones of eugenics I find a little worrying. God's creation is lumpy as well as visually appealing.

I have left until last the effect of the installation of audio-visual systems can have on the character of a worship space. Some churches have interiors into which it is perfectly possible to fit a permanent retractable screen, or screens, without seriously affecting the visual quality of the worship space. There are, however, many others where it is impossible to place a permanent retractable screen without seriously affecting the quality of the fine design of the worship space. In such cases, it seems to me that there are three options. One is simply to accept that the merit of using screens is less than the merit of the unobstructed space. A second is to use temporary screens, recognising that there is inconvenience in so doing, tidying these objects away when they are not in use. A third possibility, which CARTA is currently exploring, is to mount screens (and possibly also projectors) on trolleys, so that they can be wheeled out of the way when not in use, even during a service. The collective view of CARTA is that the insertion of screens (even temporary screens) into a very well-designed worship space can have such an adverse effect on the character of the space that it completely negates what merits the use of screens may have.

Variable lighting

For many years, it has been the practice to dim the 'house lights' in a worship space during sermon. Modern lighting systems can be operated in a much more sophisticated way. The control desk used for sound systems and audio-visual systems can also be used to control lighting. Many churches are very poorly or inappropriately lit, and an imaginative lighting scheme can be a very effective way to make the worship space more effective and attractive. Modern lighting should also be energy-saving. There is a risk in some lighting designs that worshippers will be exposed to glare from some of the fittings, and care should be taken that such designs are not adopted.

Conclusion

Where do we go from here? We must, I think, be aware that worship practice is always evolving, and sometimes being reinvented. What we do today is a part of eternity, rooted in yesterday, and the yesterdays before yesterday. It is also a part of tomorrow, and the tomorrows which will follow tomorrow. 'The *status quo* is not an option.' Even if we go on doing the same things in worship, they will come to have changed meanings, and though those which have eternal

value will retain that value, some others will become outdated, perhaps to the extent that they lose real significance.

In assessing the contemporary, and the enduring, value of new technologies in worship, it seems to me to be vital to take account of what we consider to be the essence of worship. Public worship has, I believe, two central purposes: firstly, to provide a context for the individual worshipper to enter into a dialogue with the Divine, and secondly, to share with others in a multilogue, a collective relationship with the Divine. Both involve contact with the numinous, openness to the unexpected, to revelation, vision, and to dream. We are not, I believe, called on to leave our minds in the vestibule when we come to public worship. When we are called on to become like a little child, I believe that means that we have to embrace the openness to ideas, the freshness of vision, the ability to see through clichés (and at times to see that the Emperor's so-called new clothes do not exist), which we see in young minds.

The implication of this analysis is that we should be prepared to embrace good new insights into what makes public worship maningful both to individuals and to congregations. It also means that we should, in testing innovations, be willing to use as yardsticks the extent to which they open minds, encourage individual and collective vision, stimulate dreams, and increase awareness of the numinous.

We should always aspire to the first-rate, for only in that can we worship God in spirit and in truth. We should also be conscious of the importance of dignity, integrity and authenticity in worship. In apparently trivialising, in over-simplifying, in using the artificial rather than the real, we demean the act of worship, and debase the relationship between the worshipping community and the Divine. We also run the risk of diminishing the capacity to exercise reason: the highest gift God the Creator has given us. We should, therefore, try to judge innovation not only by what has value for our time, but also by what is likely to have enduring value.

By all means, let us experiment, but let us not be the slaves of contemporary fashion, and let us be willing to discern when an experiment has not worked. Let us be mindful, too, that the present generation does not have a monopoly on wisdom. For example, some of our church interiors are, to say the least,

dispiriting, taking energy out of worshippers, rather than inspiring them. But there are also many exceptionally fine interiors, of all periods, which are full-realised architectural spaces, designed and made by people with a real sense of numinosity. In such spaces, permanent screens, or a cluttered praise band, with its residue of loudspeakers and trailing cables, can be seriously destructive of a sense of worship. I believe that dignity and repose are important in worship, as a counterpoint to liveliness and excitement, and that the latter should not extinguish the former.

Finally, I would like to thank the members of the Church Service Society for inviting me to present this paper. I feel greatly honoured. It was a particular pleasure to present the paper in Greyfriars' Church, Edinburgh, a church which embodies so much of the history of both the Church and the body politic of Scotland. In meditating on the topic, I have been very conscious of the spoken and unspoken contributions to my thoughts which have been made by present and former members and secretaries of CARTA, and by other friends. To all of them, I offer my gratitude.

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