

The Power of MUSIC

The strength of music's influence on our lives.

Introduction

1. You teach music. You organise the teaching of music. You are responsible for providing music education outside of school involving

- school children
- young people
- adults

2. Then you will be interested to learn how key to people's lives your role can be. Two of Britain's most experienced and respected music education researchers have recently contributed some fascinating, illuminating and challenging thoughts, conclusions and conjectures. In March 2001, the Performing Right Society published "The power of music", a study by Professor Sue Hallam of the strength of music's influence on our lives. And in May, Professor John Sloboda, in a keynote paper given at the Federation of Music Services' annual conference, drew upon some recent research findings including progress to date of a major ESRC project investigating the socio-economic factors influencing young people's decisions and motivations to take-up, sustain, avoid, or abandon musical involvement and the acquisition of musical skills, and asked some very controversial questions.

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3. Sue Hallam's study is valuable because it pulls together the wealth of evidence about the value or power of music for almost all of us. Never has such a variety of music been so readily available to so many, thanks entirely to the development of electronic media, starting with the "wireless" and today's gramophone record - the tape and the CD. This though has been an explosion in listening numbers. We use music to manipulate personal moods, emotional feelings; and others (on our behalf), to create environments which encourage us to buy, drink or eat more! So, it is not surprising that music has become a major world industry. National Music Council research established that the total domestic spend on music in the UK 1997 was £3.7bn. Net overseas earnings were estimated at £519m. And the UK music 'industry' employs 130,000 people (full-time equivalent). And it as well to note that all those figures relate to all music making, not simply the record industry and professional music.

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4. Fortunately, school music services and community music help to ensure that, despite the many counter attractions and easy to access recorded music, music making is still important to millions.

5. Discussion of the power of music invariably includes references to its political applications - mass rallies, party conferences - and political prohibitions, eg of jazz by the Nazis in Germany, African music by the apartheid regime in South Africa, western music generally by the Chinese Cultural Revolution. Even in genuinely democratic countries, some musics, usually those favoured by the young, generate fear and calls for banning by the "establishment". The big band swing which 'sent' the jitterbuggers in the late thirties, the rock and rollers of the late fifties and sixties and more recently heavy metal bands and rap artists have all been accused of causing anti-social behaviour and even long-term harm.

music: it can express that which has no other means of expression

6. Yet something that powerful can also have positive applications such as accompaniments to rites of passage and dance, expressions of love and respect, lullabies, liturgical revelation and enhancement, totemic expressions of apolitical national feeling (eg the music played at the Princess of Wales' Funeral Service) and of course as a unique expression of ineffable feelings. Perhaps that is the most beguiling of the mysteries attending music: it can express that which has no other means of expression.

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Neurology (Part 1)

the milk yield of cows is also increased when 'calming' music is played



7. Sue Hallam concludes that "(while) there is little hard evidence regarding the extent to which music directly influences self-directed behaviour, we do know that music can influence our moods and some aspects of our behaviour in ways which may be outside our conscious awareness." She then embarks on a fascinating summary of the neurological aspects of musical processing. Thus music can be experienced physiologically (eg changes in heart rate); through movement; through mood and emotion; and cognitively (through knowledge and memories). The fact that music is processed in many ways and has physical, emotional and cognitive effects may, in Sue Hallam's view, be the key to its power. While animals can perceive differences in sound and some can perceive differences between composers and styles of music, they are unable to retain the shape of melodies and others of the holistic aspects of music. Nevertheless, they do respond to music, indeed recent research has demonstrated that cows are more eager to gather in the milking shed when music is playing. And even more recent research seems to prove that the milk yield of cows is also increased when 'calming' music is played in the milking parlour.

some fairly primitive brain mechanisms are involved in at least some of our responses to music

8. Sue Hallam infers from those findings "that some fairly primitive brain mechanisms are involved in at least some of our responses to music". Not unconnected to that conclusion is the way that different musical skills can operate independently: this is illustrated by the way that we can know and recognise a piece of music which we hear but may be unable to retrieve information about its title or composer even though we know that we have that knowledge. Apparently, there has been less research in relation to the neurobiology of emotion. The latest theories have it that our emotional responses to music are controlled by the amygdala (which has close connections with the hypothalamus, the part of the brain which instigates emotional behaviour and ensures that we can react quickly when our life is at risk). The amygdala evaluates sensory input for its emotional meaning, receiving sensory information directly and quickly from the thalamus, a relay station for incoming information, before it has been processed by the conscious thinking part of the brain, the cortex.

9. Information is received from the cortex but more slowly, which explains those rapid, sometimes embarrassing reactions to music such as tears on hearing children singing (not to be confused with a music teacher's sometimes anguished response to what she is hearing!) or driving faster when exciting, or aggressive music is heard on the car radio. [continued overleaf...]

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music listening seems to encourage the release of endorphins which in turn elicit emotional responses

(nb relevance to KS 4 Double Science "Life processes and living things" - nervous system; the pathway taken by impulses in response to a variety of stimuli)

as a species, we share many quasi-autonomous responses to sound

Neurology (Part 2)

Thus cortical pathways take longer to react to incoming information but provide a more complete cognitive assessment of the situation. In musical terms, they invoke memories associated with the music being heard. While these may also influence our emotional responses to music, because we are consciously aware of them, our responses are more likely to be within our control. Sue Hallam also refers to research which suggests that the limbic system ("The Centre of Emotions") contains a large number of opoid receptors which are highly susceptible to the presence of chemicals like endorphins (which blunt the feeling of pain). In some circumstances, music listening seems to encourage the release of endorphins which in turn elicit emotional responses. Further evidence of the significance of the role of endorphins, and of the power of music, comes from recent UK research involving children with emotional and behavioural problems. Thus Anne Savan has found that when Mozart was played during science lessons, children, whose behaviour was normally very disruptive, demonstrated improved concentration. Pulse rate, blood pressure and temperature reduced significantly, because the music increased the production of endorphins lowering blood pressure, which led to a reduction in corticosteroids and adrenalin slowing the body's metabolism and improving co-ordination. It is good to have this more persuasive evidence of a beneficial "Mozart Effect" than the unhelpfully exaggerated claims made for the 1997 North American research of Rauscher et al.

10. Research findings sometimes seem to state what to non-scientists such as this author is the obvious (the point, of course, is that in genuine research "the obvious" is evidence based). Thus in medicine, the interactions between mind and body are now recognised as important, indeed scientists suggest that what goes on in the conscious mind affects the body. Fortunately, for those of us who value mystery, research exploring the way music is processed by the brain suggests that there is no easy way of predicting the effects of music on an individual's behaviour. So our conscious responses, which partly mediate our emotional responses, are unique. Yet, as a species, we share many quasi-autonomous responses to sound. For example, "Dido's Lament" (from the semi-eponymous Purcell opera) speaks in a very direct way to many people who do not necessarily share the same social group, age, gender or race. On the other hand, other "emotional" pieces appear to owe almost everything to age, time, place and shared memories: Vera Lynn's "The White Cliffs of Dover" is a good example.

11. In section 5 of her article, under the headings 'Physiological functioning', 'Motor effects', 'Mood, arousal and emotion', 'Behaviour' and 'Intellectual stimulation', Sue Hallam discusses overall trends in the effects of music on individuals. Some of the findings and inferences referred to are controversial. This section also includes one of the rare references to dance.

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Music in Society

no human culture appears to be without music

12. No human culture appears to be without music and singing seems to be universal. In most cultures, music has functions other than simple entertainment and aesthetic expressions for individuals; for example, the use of music by political parties and its role in social institutions, military and sporting functions, weddings, funerals, "music while you work" and its absolutely pivotal role in almost all dance.

13. Two examples of differing seriousness are worth rehearsing. First, the extent to which during adolescence, when listening to music tends to be at its peak, musical tastes can define social identity and some music can be totally unacceptable. This was exemplified with a vengeance in Montreal where classical music was deployed with great success to dissuade young people from 'hanging around' in the underground.



14. Secondly, and more seriously, given the rapid globalisation of societies, is the important role of music in maintaining the continuity and stability of communities through folk music and songs. This is especially true of expatriate communities.

15. Under the heading of Applications, Sue Hallam draws upon a substantial body of research which demonstrates clearly that music therapy is now well established and has very many applications. That should not be a surprise given the strong evidence that music has been used to alleviate illness and distress in many cultures for centuries. Perhaps the most spectacular findings come from Germany, where over a period of 20 years, research on 90,000 patients has shown that music has beneficial effects. Whether the treatment was short term, eg lumbar puncture, or long term, such as

extended labour of more than 24 hours, there were significant differences between music and non-music groups in relation to stress and anxiety. The music programme had the practical effect of reducing drug dosages by as much as 50 per cent.



an uncompromisingly bleak message

Where does music education fit?

16. The buffeting music services have received over the years has toughened the hides of heads of service against body-blows. How else does one explain the equanimity with which, at their recent annual conference, they received what, on the face of it, was an uncompromisingly bleak message from John Sloboda?

17. Sue Hallam's persuasive essay on the value of music would have been even more welcome had it been written in 1997 when some politicians and those who advise them, including the then HMCI and head of OfSTED deemed it appropriate to take music out of the National Curriculum for children aged between 5 and 11 and not to inspect the content of any music lessons. Fortunately, thanks to effective national campaigning, that mistake was corrected, though much damage was done with head teachers and governing bodies acting quickly to de-prioritise if not drop entirely music from their school's curriculum; and then needing big financial incentives, such as the music standards fund, to begin to re-instate music provision.

18. That experience calls into question whether John Sloboda's answer to his own basic premise - that music education in schools cannot function effectively without an implicit agreement between stakeholders about what it is for - is entirely accurate. He argues that

- the underpinning consensus represented by a stable mid-20th century agenda collapsed as a result of the same cultural shifts, most evident in the sixties, that led to the collapse of Christianity (and the decline of church choirs) as a dominant cultural force;
- as a result of cultural fragmentation music educators no longer occupy a privileged vantage point; they are now a small sub-set of the many sub-cultures that co-exist in the population;
- the National Curriculum for music was introduced at the very moment when its sustainability had never been less certain.

19. We might well characterise all that as interesting academic speculation. John Sloboda is perhaps on firmer ground when he goes on to suggest that no plausible "mission" for music education can be established independently of an understanding of the ever-evolving way music is being used by the various stakeholders. Then come the body-blows: recent research (some of which is described elsewhere in this MusicEd site) suggests that

- many school music teachers have little respect for or understanding of the musical lives of those they teach;
- the musical enthusiasms and aspirations of many young people are not addressed by the current curriculum;
- the transition from primary to secondary school is a key 'parting of the ways' between young people and their music teachers;
- music retains a key and central role in the lives of most people who see themselves as 'not musical', and that emotional self-management is at the heart of this role.

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Conclusions

20. For those reasons, John Sloboda hypothesises that classroom music as currently conceptualised and organised is an inappropriate vehicle for mass music education. A more effective music education environment might be found in the free, mixed economy of out-of-school provision. Using colourful language, he reflects that "such anarchy may be a crucial breeding ground for the celebration of personal autonomy and cultural differentiation that is a prerequisite for a focused and goal-directed musical engagement in a post-modern society." This would essentially be "an anarchy of social relationships where boundaries between the teacher and student role are creatively redrawn."



21. This is the territory of Youth Music (the NFYM) which through a range of initiatives is targeting new money into out-of-school music provision. That is exciting and very welcome. Yet most such initiatives are time limited. There needs to be a music service which both prepares the ground and sustains the momentum when the project ends. If John Sloboda is right, and the Government agrees, then we could find, once again that music is taken out of the mainstream curriculum, leaving the LEA music services providing for what in many areas would be mainly out-of-school provision.

22. But let us not forget the inspiring reality of what thousands of young people are doing in school, district and authority-wide groups, bands and orchestras which emerges directly from the music they make in school. Ideally, you might say, music services would seek to provide for music in both contexts. Many do, which is why it is important music stays in the National Curriculum and that Youth Music continues to work collaboratively with music services in developing out-of-school music unconstrained by the requirements of the National Curriculum.



23. All these issues will be thrown into sharp relief when Susan O'Neill's ESRC-funded research into factors influencing young people's participation and achievement in music is published in December, 2001 (www.keele.ac.uk/depts/ps/ESRC.htm) We will be reporting on that work. Meantime, you might be interested

- to look at Sue Hallam's full article and the fascinating research summaries in www.thepowerofmusic.co.uk; and
- to let MusicEd have your views on John Sloboda's speculations.