THE ARTS AND HEALTH: FROM ECONOMIC THEORY TO COST-EFFECTIVENESS

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ABSTRACT

This article examines how the known health benefits of the arts fit into the framework of economic theory, and presents a cost-effectiveness analysis of an arts-based intervention for the treatment of mild to moderate depression, concluding that such an intervention is likely to be highly cost-effective.

INTRODUCTION

Health economics and the economics of the arts are sub-disciplines of economics which can trace their respective roots to seminal publications by Nobel prize winners Kenneth Arrow (Arrow 1963) and William Baumol (1966) respectively. There has been considerable analytical as well as empirical progress in both sub-disciplines (Blaug 2001); however, the overlap between the two areas still represents largely uncharted territory in economics. This article addresses the gap in the literature, firstly by examining how known health benefits of the arts fit into the framework of economic theory, and secondly by analysing the likely cost-effectiveness of arts-based interventions as treatment for mild to moderate mental health problems. The paper begins by reviewing some key economic concepts, and discusses tangible and intangible benefits of the arts as well as the different mechanisms by which the arts may influence health before moving on to the cost-effectiveness analysis. The analysis presented in this paper draws on a desktop-based literature review as well as the author's prior experience as a consultant in health and arts economics. Searches of EconLit and MEDLINE yielded the bulk of references; several hundred abstracts were scanned and handpicked articles were then considered in detail. The Cochrane Library and websites of relevant organisations were also accessed and consulted.

Many artists may not be aware that there is virtually universal consensus among economists in favour of public subsidies to the arts (Blaug 2001). The concept of 'market failure' drives the case for public subsidy, and has been well entrenched in discussions of arts funding at least since Peacock (1969). Aubert et al. (2003) present the most elegant economic argument for cultural subsidies to date. Their model covers several types of market failure, including externalities in production. Externalities or spillovers that are generated by the arts and which benefit members of current and future generations are indeed the main causes of market failure discussed in the economic literature. These include possible health benefits and provide a lower bound estimate of the returns accruing to public investment that would not occur in the absence of government assistance to the arts.

The composition and size of spillovers from the arts however continues to be a matter of great debate, and economists consequently disagree on the appropriate overall level of the subsidy, on the mechanisms for its delivery, and on how it should be directed across the different areas of artistic endeavour. One of the underlying reasons for ongoing disagreement is the inherent difficulty in quantifying and valuing the benefits of the arts.

THE BENEFITS OF THE ARTS: TANGIBLES AND INTANGIBLES

The debate about the value and benefits of the arts can be traced back at least to the time of Aristotle and Plato. Plato's view was that the poet and playwright can, through the artistry of appearances, make ethically repugnant actions attractive and acceptable (Plato c. 360 BCE). As a consequence, the poet's art and the theatre were dangerous and ought to be controlled or proscribed. More specifically in today's health context, some of the features and processes inherent in the arts may have *adverse* health effects; one may point to the rate of depression and suicide among artists (Poldinger 1986; Schildkraut et al. 1994; Preti & Miotto 1999) or to injuries amongst performing artists as evidence of this (Ostwald et al. 1994). The trouble with this is that the arts may attract individuals who are *predisposed* to mental health problems (Akinola and Mendes 2008); their low income levels may also be an independent causal factor for many diseases and illnesses. In epidemiological terms, therefore, one would have to account for these potential confounding factors and carry out further statistical analysis to establish direction of causality. The question here really becomes, how well would people have done in terms of their health had they *not* been exposed to the arts? In particular in the arena of mental health, one

would suspect that deprived of art, many artists could have suffered more severe health issues. One commentator notes, for example, that Goethe 'in writing "The sorrows of young Werther", exorcised his own suicidal impulses and thoughts, thus probably saving his own life' (Poldinger 1986). As noted by Edel (1975), the works of many great authors are fuelled by 'tristimania', the need to transform and metamorphose personal experience by means of prose, poetry, or other artistic expression.

This fits more with Plato's most famous student's views; Aristotle argued that a theatrical performance can have a strong and positive cathartic effect on participants as well as audiences (Aristotle c. 335 BCE). Catharsis has of course long had a medical association (as in 'purging' and 'cleansing'), and has also been adopted by modern psychotherapy to describe a specific emotional experience, often associated with childhood events that have up to that moment of experience not been adequately addressed. These associations are interesting in view of the discussion that follows below.

Ruiz (2004), Matarasso (1997) and Newman et al. (2001) discuss a range of possible benefits of the arts. Apart from the benefits flowing directly to artists and arts patrons, these include positive impacts in areas such as social cohesion, community regeneration, cultural identity, health and wellbeing, as well as education and learning more generally – in other words, indirect benefits and intangibles that are often difficult to quantify in dollar terms. These are sometimes referred to as non-market goods by economists and may include so-called 'non-use' values including existence, bequest, option and prestige values.

One approach to valuing these benefits draws on techniques that were originally pioneered in the field of environmental economics (Hanemann 1994). Known as the contingent valuation approach, this uses survey methods to estimate willingness-to-pay (WTP) for the arts. People are asked to state how much they would be willing to pay for a hypothetical scenario; for example, for a state of the world which includes a new theatre in their city, or an arts festival, or perhaps a renovated museum. Estimates thus arrived at will reflect socio-economic and demographic factors as well as unique local circumstances and history, and care must therefore be taken in transferring values from one context to another (Rolfe et al. 2006). WTP studies in the arts have covered theatre (Bille et al. 2002, Throsby & Withers 1985), arts festivals and song contests (Snowball & Antrobus 2001; Thompson 2002), museums (Boter et al. 2005; Getzner & Oberlercher 2003; Sanz et al. 2003), arts heritage (Scarpa et al. 1998), and libraries (Aabo 2005), amongst others (Towse 2003).

The WTP approach to valuation is controversial, not least because it suffers from some potential methodological shortcomings such as those relating to survey respondents' strategic behavior and response bias, and the fact that respondents may pay insufficient attention to their own income constraints when making statements about their WTP (Diamond & Hausman 1994). On the whole, however, these studies do indicate that in most contexts people appear willing to pay extra sums of money – i.e., taxes – in return for additional arts provision even if they are not arts patrons themselves (Blaug 2001). This conclusion is also reinforced by direct voter preference studies that have examined public support for the arts (Schulze & Ursprung 2000).

Whether or not WTP should play a role in economic impact assessments of the arts is a moot point. Many economists remain skeptical of economic impact studies on the arts; in the words of one observer, such studies 'could easily show that even earthquakes could generate an excess of economic benefits over costs' (Blaug 2001). To be sure, the risk of overstating benefits in an economic impact assessment (EIA) or cost-benefit analysis (CBA) is a real one; however it does not detract from the equally real need to carry out such exercises. Any government body that distributes funding must somehow prioritise the different areas that could be funded

and application of CBA techniques gives such processes structure with the potential to make them more transparent.

In the context of a general discussion regarding the economic impact of the arts, it is interesting to note that little empirical work has to date examined some of the obvious and plausible spillover impacts of the arts on the economy. At the heart of most (if not all) artistic endeavour lies a creative act, and creativity in turn is also the ultimate engine of economic growth. True productivity growth is indeed impossible without some creative transformation of existing production processes, i.e. through invention and innovation. Recent endogenous growth models in particular have emphasized the importance of the production of ideas and new knowledge – a form of creativity – as key drivers of economic progress (Romer 1990).

Richard Florida made the connection in his book on the creative class, which according to him includes a 'super-creative core' of scientists and engineers, professors, poets and novelists, artists, entertainers, actors, designers, and architects (Florida 2002). Florida's creative class hypothesis has stimulated some empirical research, primarily in the area of regional economic development (e.g. McGranahan & Wojan 2007; Marlet and van Woerkens 2007; Boyle 2006); however, none of this work has focused on the role and influence of the arts component of the super-creative core.

Does a society that supports the arts create more innovators, or enhance the skills of entrepreneurs that are exposed to the arts? Which of the artist's skills and techniques translate into commercial environments? Does exposure to, or leisure time involvement with, the arts have the capacity to improve general workforce productivity? Empirical studies addressing these types of questions are still sorely lacking, and in the context of the preceding discussion it would indeed seem timely to contest Alan Peacock's early assertion that 'we are not interested in the contribution of Arts to stabilisation or growth … and we ignore the possibility that subsidising the Arts might be a way of inducing people to work harder or more efficiently' (Peacock 1969).

In summary, whilst there is a strong theoretical foundation for the subsidy in the economic literature, the true economic impact of the arts is not as yet fully understood, and funding decisions regarding the arts therefore continue to be taken in an information-constrained environment. As already indicated in the discussion on intangibles, economists are concerned with more than the purely financial impacts of the arts, and to inform the case for (or against) subsidy it is important to better understand the spillover benefits of the arts. It is in this context that the health benefits associated with the arts become particularly relevant.

ROUTES FROM ARTS TO HEALTH: COPING, PHYSICAL AND MENTAL ACTIVITY AND REDUCED ISOLATION

At least three pathways by which the arts could influence an individual's health can be hypothesised. The first of these concerns ways in which art might stimulate coping mechanisms. Participation in almost any of the arts involves encountering techniques that have the capacity to enhance coping strategies: ways of seeing things differently in the visual arts, theatre games, creative writing, singing and movement, etc., all encourage previously unaccustomed ways of using the mind and body. They almost inherently embrace difference, experimentation, newness and surprise, and militate against the processes by which an individual's expectations might become ossified.

The arts have a demonstrated ability to assist people in breaking from habitual negative thought processes (Staricoff 2004; Camic 2008) and improving internal coping resources (Oster et al. 2006) and this could be particularly helpful for people with mild to moderate mental illnesses including, for example, expectations disease (Frank 1993). Through their influence on an individual's adaptive or self-regulatory capacity the arts may also play a role in keeping people out of the doctor's surgery or the hospital in the first place, and thus have a role in preventative health. In the words of one observer, 'if memories are pain, fiction is anaesthesia' (Schelling 1985). The editor of no less than the British Medical Journal took this sentiment further by stating that 'books or films may allow you temporarily to forget your pain, but great books or films (let's call them art) will ultimately teach you something useful about your pain … If health is about adaptation, understanding, and acceptance, then the arts may be more potent than anything that medicine has to offer' (Smith 2002).

It is important to note in this context that, for women, anxiety and depression are currently the single most important causes of disease burden in Australia – for men it is the third ranked cause of disease burden – (Begg et al. 2007). In total, this burden totaled an estimated 191,785 disability adjusted life years (DALYs) in 2003 (Begg et al. 2007). The cost associated with this can be estimated at tens of billions of dollars each year; for example, if one values a DALY on the basis of the so-called value of a statistical life year (VOSLY), which in the Australian context has been pegged at $150,000 (enHealth Council 2003), the cost would be around $29 billion. If we look at actual expenditures, the most recent estimates reveal that at least $3.7 billion are spent on mental health services in Australia annually (Australian Institute of Health and Welfare 2008). Of this, $670 million are attributed to mental health-related medications alone. Nearly three quarters of prescriptions are issued by GPs during routine visits, and over 90 per cent of the cost of medications is for antipsychotics and antidepressants. The prescribing of antipsychotics has risen particularly rapidly at around 12 per cent p.a. in recent years (Australian Institute of Health and Welfare 2008). These figures are noted here in view of the possibility that some of these costs, and in particular future escalation of these costs, could be avoided through increased arts participation, more on which below.

The second pathway from art to health is through the physical and mental activity involved in the consumption and production of art. Direct participation in the arts in particular may involve mild to moderate exercise, with pottery, sculpture, glass blowing and various activities in the performing arts providing ready examples. Those who are not inclined towards physical exercise or are unable for various reasons to participate in sports may thus benefit quite unintentionally – a serendipitous outcome of arts participation. For some, if not many, the alternative to participating in an arts project might indeed be a much more sedentary activity.

Once again, in this context, it is noteworthy that lack of exercise is the major avoidable risk factor for cardiovascular disease (Gaesser 2007; Morris & Froelicher 1993). There is also evidence that relatively mild exercise may have similar cardiovascular benefits as vigorous exercise (Hennekens, 2000). Cardiovascular disease, in turn, is Australia's leading cause of disease burden in men, and the second most important cause of disease burden in women. Its total disease burden is estimated at 473,800 DALYs in 2003 (Begg et al. 2007), more than twice the amount for anxiety and depression referred to earlier. Even if participation in the arts only raises levels of physical activity by a small amount, a contribution to cardiovascular health is likely to follow as a consequence.

A third mechanism by which participating in the arts can improve a person's health and wellbeing is through a reduction in social isolation. Social isolation is a major risk factor for morbidity and mortality from widely varying causes. The deleterious effect of loneliness on health is in fact comparable in size to obesity, sedentary lifestyles,

and possibly even smoking (Cacioppo et al. 2002). Many artistic endeavours involve group activity and/or a sense of belonging to a group, with benefits flowing not only to people involved in the production of art itself but also to the many consumers of the arts: book clubs, choirs, art and adult drama classes, and even casual gatherings at the theatre, cinema or art galleries all afford possibilities for social contact. Insofar as these influences help prevent individuals from slipping into social isolation, a clear health benefit is to be expected. Indicative of this are the results of the only long-term study of arts attendance as a determinant of survival, a Swedish survey that tracked the health outcomes of 10,609 individuals over 14 years and which found a higher mortality risk for those people who rarely visited the cinema, concerts, museums, or art exhibitions compared with those visiting them most often (Konlaan et al. 2000; relative risks ranging from 1.14 to 1.42 at 95% confidence levels).

A number of further routes by which the arts may influence health can be hypothesised (Staricoff 2004; Camic 2008). Staricoff's review, which covers 385 references from the medical literature, concludes that there is indeed strong evidence for the arts in inducing positive physiological and psychological changes in clinical outcomes, reducing drug consumption, shortening length of stay in hospital, increasing job satisfaction, promoting better doctor-patient relationships, improving mental healthcare, and in developing health practitioners' empathy across gender and cultural diversity (Staricoff 2004). These benefits extend well beyond the limited benefits discussed above, where the focus has been on major current and emerging health problems, and where some obvious value is to be had from the arts in particular in view of the ageing of the population, which will bring with it further challenges of keeping people active, contented and socially connected in their old age.

The appeal of participatory arts programs in particular is that they typically 'bundle' many of the benefits mentioned above – but can it be demonstrated that investing in arts projects and programs is a cost-effective way of attaining health benefits?

THE QUESTION OF COST-EFFECTIVENESS

When there is a trade-off between an existing approach to managing a specific disease, and other – possibly new and costlier – treatment or management options that may yield better health outcomes for the patient, health economists often employ so-called Markov or transition state models to ascertain which approach to management offers the best value for money. Markov models use disease progression rates and cost data which would usually be obtained from published sources, ideally based on large-scale randomised controlled trials (RCTs). The models simulate hypothetical or 'synthetic' population cohorts moving through various age categories under the different treatment regimes, and generate estimates that allow some comparisons to be made between the existing standard of care and the comparators. Sadly, in the author's experience, even with respect to some of the most studied health problems there continues to be a lack of robust disease progression data as well as cost data which can limit the usefulness of these sophisticated Markov modeling type exercises.

In the area of arts and health, the extensive literature search undertaken for this paper (as well as the author's prior knowledge) indicate that there has been no large-scale RCT published from which robust data could be drawn to build a reliable Markov model. One obvious issue here is that art is currently not a mainstream treatment option for illnesses such as depression; another reason for the paucity of randomised data is the cost of implementing large clinical trials and the lack of incentive (i.e. a patentable product) for the private sector to invest in such a trial.

A substantial amount of relevant data and information is however already available, and this can be used to assess *likely* cost-effectiveness scenarios – and valid inferences can certainly be drawn despite the inability to engage in complex modeling. A good deal of the latest evidence comes from the UK, which has led the field with a number of innovative arts and health initiatives such as the Greater Manchester Arts and Health Network (GMAHN) and various 'Arts on Prescription' (AoP) as well as 'Singing on Prescription' initiatives. Notably, the British efforts have also made systematic data collection and health impact evaluation a priority.

Manchester Metropolitan University (MMU) recently published findings on health outcomes pre- and post-intervention for people participating in various arts programs as well as for a control group (Manchester Metropolitan University 2008). This showed that there were significant improvements in a number of well-established measures of health and wellbeing for participants whilst there were no significant changes in the control group. The strongest statistically significant effect was seen in the anxiety and depression scale (HADS), the overall score for which fell by 35 per cent for all participants on average (Manchester Metropolitan University 2008). The subscale score relating to severe depression of another measure used in the report, the General Health Questionnaire (GHQ-28), in fact fell by 39 per cent across all projects (Manchester Metropolitan University 2008). Importantly, these results are of a similar order of magnitude as the reductions reported for antidepressants in the recent meta-analysis by Kirsch et al. (2008), which found that drug-placebo differences in antidepressant efficacy increase as a function of baseline severity, but are relatively small even for severely depressed patients.

Another recent paper reports results from an AoP program on the Isle of Wight in the UK (Eades and Ager, 2008). With follow up data for two years, this study found that two thirds of respondents experienced health gains, including lower indicators of depression and anxiety, and 74 per cent intended to include creativity in their long-term lifestyle (Eades & Ager 2008).

Other recent evidence from the area of art therapy includes projects dealing with late stage cancer patients (Visser & Op 't Hoog 2008; Bar-Sela et al. 2007), serious juvenile offenders and prisoners (Persons 2008; Gussak 2007), and hospital staff who are at serious risk of burnout syndrome (Italia et al. 2008). All of these papers reported that art therapy led to improvements in a range of health outcomes, notably reduced levels of depression, emotional exhaustion, fatigue, and cognitive and emotional distancing, as well as improvements in self-reported quality of life, thus corroborating the findings previously reported by Staricoff (2004).

Australian researchers were also recently involved in a cross-national project that studied the benefits of singing in a cohort of over 1,100 choral singers in Australia, Germany and the UK (Stewart 2008). Whilst 51 per cent of the choralists had long term health problems (more than twice the Australian average), 98 per cent rated their quality of life as good or excellent, and 81 per cent were satisfied or very satisfied with their health – well above the norm (Stewart 2008).

The preceding discussion has covered a number of different health benefits; however, cost-effectiveness is usually assessed in relation to a specific condition or health outcome. Based on the literature surveyed here, treatment of mild to moderate depression emerges as a suitable candidate upon which to build a cost-effectiveness assessment: not only is it a sizeable and growing problem, but a number of arts for health projects have demonstrated the ability to deliver significant reductions in depression amongst participants.

IDENTIFYING THE COMPARATORS

There are two broad comparators to arts in the treatment of depression, namely, pharmacological intervention (medications) and psychotherapy. As discussed earlier, the literature search was unable to identify published data on any intervention that compares directly the full range of treatment approaches. Evidence regarding the relative clinical effectiveness of these approaches is accordingly limited (Kirsch et al. 2008; Bosmans et al. 2007; Schulberg et al. 2002; McAllister-Williams 2008; Bosmans et al. 2008; Kendrick et al. 2006; Lazar & Gabbard 1997). The treatment options do appear to be slightly more effective than placebo (i.e. a dummy pill), and a perceived advantage of the psychotherapeutic and arts-based approaches lies in the acquisition of internal coping skills which may also lead to a lower risk of relapse and therefore possible long term savings (Paykel et al. 2005; Poldinger 1986).

One of the few available comparative studies, a randomised controlled trial of non-directive counseling, cognitive-behaviour therapy, and usual GP care for patients with depression found that there was no significant difference in health outcomes or costs between treatments after one year (Bower et al. 2000). The authors reported that direct costs for all three approaches were approximately £500 per year, equivalent to around $1,250.

The Australian health system costs of the two broad comparators are significant; at a minimum, the medications comparator would likely involve the following costs (i) a course of antidepressant medications taken over six months, e.g. fluoxetine, paroxetine or venlafaxine, (ii) two GP visits (one at the start of the period and one at the end), and (iii) the drawing up of a GP Mental Health Care Plan. The basic cost of the medications comparator under this most simple scenario is $450 over a six month period (based on Medicare Australia 2007 and current Pharmaceuticals Benefits Scheme list prices). If an in-depth psychiatric assessment occurs, a further $200-$400 will be incurred for an initial assessment by a specialist; additional review and/or development of strategies with other clinicians will add a further $100 per episode. Each additional six month period of medications, possibly as a result of rotating drugs, would add around $200 for medications, and subsequent visits to the GP or specialist will cost at least $40 each. In addition to health system costs, medications are of course also associated with indirect costs such as side-effects (Hu et al. 2004), but for simplicity these are excluded here.

The psychotherapy comparator can be pegged at a minimum level using the following costs (i) an initial GP visit and the drawing up of a GP Mental Health Care Plan, and (ii) 12 planned face-to-face counseling sessions lasting 30-40 minutes each (Medicare's Focused Psychological Strategies approach). The health system cost of this program would be around $1,175 at Medicare list fees current at the time of writing. This clearly involves a cost escalation over the pharmaceuticals based approach, at least during the first six months.

These costs can now be compared with those associated with a possible art for health intervention, such as the British 'Arts on Prescription' (AoP) programs. The most notable difference is that a typical AoP program will involve group sessions, which greatly reduces the cost when compared with one-to-one counseling, for example. If we posit a cost of $200 for a suitably experienced artist to conduct a 90 minute teaching session (including materials and overheads), with a number of patients attending, per patient this cost might be in the region of $25-$30 for a session. A 12-session AoP course, coupled with GP visits at the start and end of the program, will thus in all likelihood be cheaper than the medications based comparator, and substantially cheaper than psychotherapy.

Given that the literature appears to indicate broadly similar levels of clinical effectiveness in the treatment of mild to moderate depression for all three approaches (art, psychotherapy and pharmaceuticals), the cost-effectiveness of an AoP intervention becomes self-evident – that is, AoP is likely to be cheaper whilst yielding similar health improvements in the individuals who participate in these programs to those who take medications or who receive psychotherapy. Considering the range of additional health benefits that flow from mild exercise and a reduction in social isolation, neither of which either of the comparator approaches confers upon the patient, the AoP intervention becomes very cost-effective indeed.

All of this could be demonstrated more 'rigorously', for example, using a Markov modeling approach in which a patient cohort moves through a sequence of health states as discussed earlier (Keeler et al. 1987); however given the current state of knowledge regarding the relative efficacy of the different treatment approaches, and the natural history of the disease, the outcomes would be identical. The reason is quite simply that as long as the best available evidence indicates that there is no significant difference in the health outcomes associated with the comparators, disease progression would have to be modeled identically for the three options (arts, medications and psychotherapy) but the AoP intervention would continue to be the cheapest. Moreover, even the most sophisticated Markov models cannot capture the other benefits of the AoP approaches such as the reduction in social isolation which neither medications nor the psychotherapeutic approach deliver.

ARTS AS PREVENTATIVE MEDICINE?

It is not difficult to infer from the above that the arts could perhaps be used more broadly in the prevention of disease, not just its treatment. The main issues here relate to existing impediments to engagement in cultural activity, and the appropriate vehicles for dissemination of the arts. At the 2020 Summit in Canberra, a number of social, cultural and economic barriers to access were highlighted, including the fact that a majority of Australians believe that the arts attract people who are elitist and pretentious, and that one in three Australians think that 'the arts are OK, but irrelevant to me' (Australian Government 2008). Clearly, one cannot force people to engage with the arts, but where information on the benefits is lacking or where outdated cultural norms prevent people from participating, an increase in emphasis on the health benefits that flow to the individual might help to correct for some of the distortions that are currently still in place. Early education is clearly important too.

In conclusion, whilst economic theory provides broad support to the idea of subsidising the arts, the true social and economic impact of the arts is still poorly understood. One of these impacts is the benefit that greater participation in the arts can bring to the health of the nation. Evidence is accumulating that a number of arts for health interventions deliver real health benefits to people. The cost-effectiveness analysis presented in this article shows that group-based participatory arts projects could be used as an effective, low-cost strategy to combat mild to moderate mental health problems such as anxiety and depression, the incidence of which has been rising rapidly in recent years. Aimed more widely at people who would otherwise not access the arts, such participatory arts projects have the potential to act as efficient, high return vehicles delivering health as well as a range of other valuable benefits to the community.

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