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Does brain research provide a case for the transfer of public monies to the arts?

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This paper proposes, by way of a theoretical model, that public subsidies for the arts act as a spur to the consumption of the arts which, in turn, increases the level of human capital, leading to increased economic growth. It points out that some recent studies in brain research deliver empirical evidence for this model, although it is as yet too early to prove it. Whilst, if accepted, the model will certainly justify subsidies for the arts, it still leaves many questions about efficient scope and scale unanswered.

Key words: human capital, economic impact, efficiency

1. Introduction

Each year, all over the world, billions of dollars in tax money are channelled into financing art exhibitions, paying salaries to members of orchestras, subsidising movies or awarding scholarships to poets. Economists constantly argue (albeit not on a highly intensive level) about whether such expenditure is justified, on the theoretical grounds that supply and demand are usually controlled by the market and that any kind of government intervention calls for special justification. The next section will briefly summarize the main arguments that public money invested in the arts represents a sound investment as well as the counterarguments that have been pursued so far.

This paper aims to construct a causal link between the debate in welfare economics about the rationale of arts funding and contemporary medical research relating to the connections between the arts and brain activities and abilities through the field of public education. Section 3 is intended to briefly outline a theoretical model for the rationale of public arts funding based on the fact that human capital generates vast amounts of positive externalities in a society, while Section 4 reviews the recent medical literature about the impact of exposure to the arts on intelligence. Section 5 derives conclusions about the possibility and validation of this argument.

2. "Classical" arguments for and against funding the arts

One of the economists most concerned about the pros and cons of publicly funding the arts is Tibor Scitovsky (Bianchi, 2003). In 1972, Scitovsky noted that

"The only valid argument for government aid to the arts is that it is a means of educating the public's taste and that the public would benefit from a more educated taste." (p.62)

The author has not been specific as regards exactly what he means by his reference to an "educated taste". Education is always bound to teach *something*, but what this *something* could be is only hinted at several years later, when Scitovsky (1983; 14) refers to art as an "outlet to man's passion for excitement, adventure and stimulation", hoping that, in this way, art might replace "the obnoxious and more costly outlets to those same passions" like criminality. Hence, the education Scitovsky referred to was not so much an education concerned with learning a particular skill or

collecting information; instead, it was meant to be a possible means of ridding oneself of excess aggression.

The problem with this claim is that it is difficult to support it with any kind of empirical evidence. The same applies to an argument propounded by Fullerton (1991) who justifies art funding by means of a model in which the average tax payer has a preference not only for consumption of the arts, but also gains utility purely from the fact that others consume a certain amount of arts, something that Kok *et al.* (2002) term 'psychological externalities'. The point when public subsidies for consumption of the arts start to become efficient is the point at which my utility rises when my neighbour goes into the concert hall instead of into the football stadium.

Claims that the arts have public goods characteristics (Throsby and Withers, 1983; Throsby, 2003) are only valid for very few institutional settings, as buying paintings is as excludable an action as attending a performance at the theatre. The claim, however, that arts are merit goods has occasionally been cited (Towse, 1994) and has a far broader potential. Merit goods are goods that should be provided by the state merely due to their superiority although no demand for them exists on the part of consumers .

However, since Musgrave(1957) introduced the concept of merit goods, its critics (Baumol, 1962; McLure, 1968; Schmidt, 1970; Mackscheid, 1974; Tietzel and Müller, 1998) have become much more numerous than its supporters (Folkers, 1974; Head, 1966; 1969). Both Solf (1993) and Frey (2003) focus on the application of the merit goods argument to public subsidies for the arts and both come to the conclusion that the superiority of art consumption to the consumption of other goods is something that cannot be objectively proven.

Taken together, the scepticism that exists as regards the transfer of tax revenue to the arts is widespread among economic scholars, and the debate has not really moved on since Sawers (1993; 36) concluded 20 years ago:

"The evidence suggests there are some arguments which may justify small amounts of assistance, linked to informing the young about the arts and to preserving art for future generations. Local subsidies may also be justifiable, if financed by local people for anticipated benefits for the local economy. But (...) the case for substantial and widespread subsidies from the national taxpayer does not seem sustainable."

3. Theoretical Model

Before entering the model itself, a few words need to be said about its normative framework. The economic discourse as described above more often than not refers to some rather abstract definition of utility, implicitly more often than explicitly. If the sum of this concept of utility is maximized in society through the use of tax monies to fund the arts, the transaction will be considered to be efficient.

Two schools can be distinguished that attempt to operationalize utility in real world settings (Mann, 2007). Classically, utility is measured by monetary outputs, such as GDP, so that economic growth is set equal to additional utility. A more recent school considers subjectively stated happiness as a more potent indicator of utility. However, the support of happiness as a proxy for utility is restricted

to a minority of economists and is sometimes criticized for fundamental reasons (Hudson, 1996). If exposure to the arts were to contribute to subjectively stated happiness, it would convince some economists that subsidizing the arts is a good thing and could finally be considered as efficient in the economic sense. But the potential for such conviction would be far greater if it could be shown that funding the arts could spur on economic growth, as the model in this section proposes to do.

The graphic below depicts a somewhat simplistic justification for using public money for subsidies for the arts. The claim that funding the arts eventually leads to economic growth presupposes three causal links. Although all of these links require some justification, their contestability differs to a major extent.



Figure: A model for creating economic growth through arts funding

The most acceptable link will be the one where the level of arts consumption is influenced by the amounts of subsidies. Once subsidies for the arts are provided, the equilibrium price to be paid by art consumers will fall. Since the demand elasticity of arts is usually less than zero (Seaman, 2006), this will lead to an increase in the level of consumption. Subsidies will not lead to (increased) demand in every case, but in general they will contribute towards making arts consumption more affordable and towards extending it.

When it comes to demonstrating the causal link between human capital generation and economic growth, matters are not quite so straightforward. However, while the pioneers in human capital research like Schultz (1961; 1963) more or less had to claim that the level of human capital would certainly influence economic growth, empirical evidence during the last decades has mounted. Denison (1985) found that the increase in years of schooling between 1929 and 1982 "explained" about 25 percent of the growth in U.S. per capita income during the period. But not only total investment in human capital was found to be influential for economic growth, but also public investments. In a broad cross-country study, Barro and Sala-i-Martin (2003) showed that the proportion of the public budget going into public education was also a powerful predictor for economic growth. Whereas Petrakis and Stamakakis (2002) show how different stages of education have different impacts in different regions of the world, a recent publication by Zuhair and Natoli (2012) shows that the causal connection between human capital generation and economic growth is becoming increasingly important.

However, even if it were beyond dispute that arts consumption would generate human capital, the different qualities of the resulting human capital should be compared carefully when deriving normative conclusions. One could argue that the fact that human capital generation leads to economic growth is usually taken into account by offering obligatory and strongly subsidised schooling. Schooling represents the most general institutionalisation of education as "it interrelates with institutional and social practices without making a distinction between ideas, discourse, and nominalism in opposition to realism" (Popkewitz and Rizvi, 2009).

Even before embarking on a discussion about the potential qualitative advantages of arts as compared to conventional schooling, the simple answer to this issue is life-stage related. The

majority of adults are not exposed to formal education in a regular manner. The arts are a tool by which voluntary and often highly motivated exposure among adults can be organized once their period of formal education has ended.

Again, this presupposes that the arts generally have a positive impact on human capital. As the opposite could be the case as well, the following section is dedicated to gathering evidence in relation to this.

4. The effects of arts consumption on human capital

Although education is the domain of schools, the idea of making extensive use of the arts for this purpose is not entirely new. A large-scale “Learning Through the Arts” (LTTA) project in Canada is attempting to fully exploit the potential of art for generating intelligence and creativity, teaching history through role playing, multiplication through songwriting and geometry through the visual arts. Smithrim and Upitis (2005) established that there were no baseline differences between students in regular schools and LTTA students in terms of achievement and socio-economic status, while “LTTA students scored significantly higher on tests of computation than students in control schools” (p. 109). Likewise, Melnick *et al.* (2011; 154) conclude that “students in schools where the arts are an integral part of the academic program tend to have an academic advantage over students for whom that is not the case.”

While the main institutional source of human capital may be school, the physical source of human capital is surely the human brain. And whereas, for many decades, one had to rely on indirectly measuring the outcomes of human brain performance through intelligence tests and similar means as described above, brain research is a scientific field where methods have advanced considerably during recent years and will continue to do so (Stevenson and Kording, 2011). Through the technological advances made, the effects on our minds can now be measured in a reasonably direct manner.

Two studies, for example, have found through direct monitoring that viewing artwork reduces stress significantly (Eisen *et al.*, 2008; Ulrich, 2009). Given that one fifth of total health care costs in France, for example, are related to illnesses caused by work-related stress (Bejean *et al.*, 2010), art would appear to have some potential to create the recreation needed in a busy environment.

In finding that reading Shakespeare engages the brain more actively than most contemporary texts do, Thierry *et al.* (2008) show that the intellectual level of art matters. A complex sentence structure presents more of an active challenge to the brain than simple messages. This certainly emphasizes the qualitative aspect: not every piece of art will make an equal contribution towards the generation of human capital.

And not only the consumption of, but also active engagement in the arts has been shown to be an important driving factor for human capital. While Yarett (2012) recommends that you “listen to classical music (...) and you might be raising your IQ”, Wan and Schlaug (2010) have shown that playing an instrument boosts the intelligence coefficient.

Posner and Patoine (2009; 6) take these and similar studies together, suggesting that

“From our perspective, it is increasingly clear that with enough focused attention, training in the arts likely yields cognitive benefits that go beyond “art for art’s sake.” Or, to put it another way, the art form that you truly love to learn may also lead to improvements in other brain functions. “

5. Conclusions

While it is extremely plausible that exposure to arts influences (as does the rest of our life) the functioning and performance of our brains, there is still a lot of medical and interdisciplinary research to be carried out before our knowledge as regards the effect that looking at art, listening to and playing music or watching a theatre play or a movie has on the development of intelligence is sufficiently understood. However, research of this nature is already underway and initial findings indicate that exposure to the arts does indeed have a measurable effect on intelligence.

It is reasonable to expect that the evidence will emerge during the years to come. However, even if we do get to the stage where it is difficult to deny that arts consumption boosts intelligence, there will still be many qualitative questions regarding just how this translates into a cultural policy that is justifiable from a purely economic viewpoint. Should the consumption of art by elderly people who do not contribute to GDP be subsidised as well? Should art feature to a greater extent in the state school curriculum? And how do we go about developing an objective approach to the varying qualities of artwork?

The model that arts funding represents an efficient instrument for spurring on economic growth through the accumulation of human capital is a promising starting point for the economic justification of a very widespread practice. However, even if accepted, it will generate at least as many open questions as it does answers.

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