

ON THE SUSTAINABILITY OF CULTURAL CAPITAL

David Throsby*

Abstract

The concept of sustainable development as defined in ecological terms can be extended to apply to culture by recognising parallels between the concepts of natural and cultural capital. This paper reviews the definitions of both these forms of capital and shows how they contribute to sustainability. Criteria for weak and strong sustainability are considered, on the basis of which a strong sustainability rule for cultural capital is derived. It is speculated that certain cultural indicators may be useful in providing first approximations to variables that would need to be quantified in any eventual empirical application of this model.

Keywords: Natural capital, cultural capital, sustainability, sustainable development

JEL Classification: Q01, Q57, Z11

*Professor of Economics, Macquarie University, Sydney, 2109. Email: dthrosby@efs.mq.edu.au.
With the usual caveat, I am grateful to Sean Turnell for comments on this paper.

On the Sustainability of Cultural Capital

David Throsby

1. Introduction

The concepts of “sustainability” and “sustainable development” were first brought to widespread public attention via the work of the UN World Commission on Environment and Development (“the Brundtland Commission”). The Commission’s report *Our Common Future* (WCED, 1987) made it clear that a healthy economy depends on a healthy biosphere and vice versa, and introduced the idea of sustainability as a means of integrating economic and ecological concerns in long-term development strategies. At the same time in the emerging sub-discipline of ecological economics, interest was growing in the concept of natural capital (El Sarafy, 1991), a form of capital distinct from manufactured and human capital and amenable to analysis, taking account of its particular properties using the familiar means of capital theory. One of the distinctive aspects of natural capital was seen by ecological economists to be its sustainability properties (Costanza and Daly, 1992; Jansson *et al.*, 1994). In terms of environmental and economic policy, these paradigms imply interpreting the management of natural capital as a matter of defining sustainable development paths for the economy under a variety of assumptions (Solow, 1986; Hartwick, 1995).

More recently the idea of sustainability has been extended to the realm of culture. The first efforts in this direction came not so much from theory as from the practical concerns of another UN Commission, the World Commission on Culture and Development (“the Pères de Cuéllar Commission”). This body was set up in the early 1990s with the ostensible aim of doing the same thing for culture as Brundtland had done for the environment. Although it failed to have the same impact on public awareness as its predecessor, its report, *Our Creative Diversity* (WCCD, 1995) raised

issues concerning the relationship between culture and development in somewhat similar terms and placed them at least implicitly within a context of sustainability. Subsequently there has been some further interest in the notion of cultural sustainability, one strand of which is concerned with direct interactions between culture and the environment (Nassauer, 1997; Garcia Mira *et al.*, 2003), another employing the recently developed concept of cultural capital (Throsby, 1997, 1999; Shockley, 2004), with a related strand applying sustainability concepts to urban cultural heritage (Strange, 1999; Rana, 2000).

The present paper looks at the possibility of developing a sustainability rule for cultural capital. The paper is organised as follows. In the following section natural and cultural capital are defined. Then the specific question of weak and strong sustainability is discussed. Next a simple model is developed in which cultural capital stocks are represented, and a sustainability condition is derived. Finally some conclusions are drawn.

2. Definitions

The elements of natural capital comprise renewable and non-renewable resources, the ecosystems that support and maintain the quality of land, air and water, and the vast genetic library referred to as biodiversity. The economic dimensions of all of these phenomena have now been extensively analysed and discussed, and these discussions continue to contribute to the formation of policy in a number of areas where environmental issues are prominent. In the cultural arena, the concept of cultural capital is gradually taking shape. An item of cultural capital can be defined as an asset that embodies or gives rise to cultural value in addition to whatever economic value it might possess. An example makes this intuitively clear: a heritage building may have some commercial value as a piece of real estate, but its true value to individuals or to the community is likely to have aesthetic, spiritual, symbolic or other elements that may transcend or lie outside of the economic calculus. These values can be called the building's cultural value.¹ Cultural capital defined in this

¹ It is expected that there will be some relationship between cultural and economic value, since individuals will generally be willing to pay more for items they value more highly in cultural terms. But the relationship is unlikely to be perfect, and many examples exist of goods with high cultural

way may exist in tangible form as buildings, locations, sites, artworks, artefacts, etc., or in intangible form as ideas, practices, beliefs, traditions etc.

The parallels between natural and cultural capital now become apparent. Both have been inherited from the distant or recent past, the former provided as a gift of nature, the latter deriving from human creativity. Both impose a duty of care on the present generation, the essence of the sustainability problem discussed further below. Furthermore, just as natural ecosystems support the real economy, so also are cultural systems – the networks of cultural relationships and institutions that permeate societies – essential to sustain economic activity; thus, for example it can be argued that when cultural ‘ecosystems’ function well, human productivity can be increased and economic growth can be enhanced. Finally, the notion of diversity, which is of such overwhelming importance in the natural world, has an equally vital role to play in cultural systems; it is clear that cultural diversity makes an important contribution to artistic and cultural dynamism which, in turn, has flow-on effects in the economy, for example via its contribution to the so-called creative industries.

As noted earlier, the concept of natural capital forms the basis for thinking about sustainable development – the management of natural resources in a way that provides for the needs of the present generation without compromising the capacity of future generations to meet their own needs.² A key element of this definition is the concept of equity in the treatment of different generations over time, i.e. the principle of intergenerational equity. When applied to cultural sustainability, this concept can be considered as relating principally to the management of cultural capital, because the stock of cultural capital, both tangible and intangible, embodies the culture we have inherited from our forebears and which we hand on to future generations.

In addition to intergenerational aspects, the notion of ecological sustainability also implies several other principles, including attention to equity within the present generation, the maintenance of biodiversity, and observance of the precautionary principle (taking a risk-averse stance when confronted with decisions that may cause

value and low economic value, and vice versa. For further discussion of the concept of cultural value see Throsby (2001a Ch. 2), Holden (2004), and contributions to Hutter and Throsby (2005).

irreversible change).³ Principles of sustainable development in cultural terms can be proposed along the similar lines. Thus, for example, intragenerational equity in the cultural arena would imply fairness in access to cultural participation across social classes, income groups, locational categories, etc., the provision of cultural services for minority or disadvantaged groups, and so on. Likewise the principles of maintaining cultural diversity would derive from the proposition that the diversity of ideas, beliefs, traditions and other artistic and cultural manifestations yields a flow of cultural services which is quite distinct from the services provided by the individual components. The precautionary principle, too, has a parallel in the cultural sphere. In the natural world this principle is invoked when species loss is threatened; the same situation arises when, for example, an item of cultural capital such as a historic building is in danger of demolition, or indigenous languages are faced with extinction.

3. Weak and strong sustainability

The essential concern of sustainability is with the maintenance of capital stocks. In terms of physical capital, if a country's aggregate consumption is less than or equal to its net domestic product, it must be at least maintaining its total capital stock, and can therefore be defined as following a sustainable development path. If the capital stock referred to is extended to include natural and human capital as well as physical capital, the question arises as to whether different types of capital can simply be aggregated, such that a decline in the level of one type of capital can be compensated for by an increase in another. In other words, this raises the issue of substitutability between forms of capital.⁴

Two essential paradigms for sustainable development have emerged in the literature based on ongoing interpretations of the issue of substitutability between

² This 'definition' of sustainable development is a paraphrase of that proposed in the Brundtland Report (WCED, 1987:43). For discussion of sustainable development in an Australian context, see Krockenberger *et al.* (2000); Yencken and Williamson (2000); Throsby (2001b).

³ For a discussion of the principles of ecologically sustainable development (ESD) in an Australian setting, see the reports from the Australian Government's ESD Process of 1990-91 (ESD Working Groups, 1991).

⁴ The contrasting positions in regard to the sustainability of natural capital can be seen in two standard texts, Dasgupta and Heal (1979) representing a strictly neoclassical (substitutable) approach, and

natural and human-made capital (Neumayer, 2003). The first, which can be called “weak sustainability”, derives from the original work of the two economists cited above, Robert Solow and John Hartwick. In a series of papers (Solow, 1974a, 1974b; Hartwick, 1977, 1978) they investigated the question of investing the rents from exhaustible resources in the presence of concern for intergenerational equity. In its simplest form this model portrays an economy in which the competitive rents from current use of the exhaustible resource are reinvested in human-made capital goods, enabling society to maintain a constant consumption stream; the accumulation of physical capital exactly offsets the decline in natural capital. As is apparent, this model assumes that natural and human-made capital are perfect substitutes in the production of consumption goods and in the direct provision of utility for both present and future generations. Hence it is the aggregate capital stock that matters and not how it is comprised; in other words, it doesn’t matter if the present generation uses up exhaustible resources as long as sufficient new physical capital can be provided to future generations by way of compensation.

The other paradigm is that of “strong sustainability” which regards natural capital as being strictly non-substitutable for human-made capital, a view deriving in part from the unique life-supporting properties of global air, land and water systems. Proponents of strong sustainability argue that no other form of capital is capable of providing the basic functions that make human, animal and plant life possible (Barbier *et al.*, 1994). Moreover some forms of natural capital cannot be reconstructed once they are destroyed; for example, the destruction of biodiversity is a loss of natural capital that cannot be reversed, and even climate change could result in ecosystem damage that is irreversible. In other words, the strong sustainability paradigm assumes that the functions of natural capital cannot be replicated no matter how spectacular future technological advances might be.

Particular interest has been focussed on the specification of optimal development paths for an economy under the different paradigms. This requires some means of measuring whether or not a given path is sustainable according to the assumed criteria. An effort in this direction is provided by Pearce and Atkinson

Pearce and Turner (1990) who put the non-substitutability case. An overview is provided in Victor

(1993), who propose a sustainability indicator Z for a weakly sustainable development path where the economy is defined as sustainable if it saves more than the combined depreciation on man-made and natural capital, i.e. $Z > 0$ if and only if

$$S > (\mathbf{d}_M + \mathbf{d}_N) \quad (1)$$

where S is savings, \mathbf{d} is depreciation, with the subscripts M and N indicating man-made and natural capital respectively. Pearce and Atkinson proceed to estimate the indicator empirically for a range of countries, concluding that “even on a weak sustainability rule many countries are not likely to pass a sustainability test” (p. 105).⁵

4. Sustainability of cultural capital

How do these sustainability paradigms apply to cultural capital? Here it has to be recognised that cultural capital gives rise by definition to two sorts of value: economic and cultural. It is clear that provision of many of the *economic* functions of cultural capital is readily imaginable through substitution by physical capital; for example the services of shelter, amenity etc. provided by a historic building could as well be provided by another structure without cultural content. However, since by definition cultural capital is distinguished from physical capital by its embodiment and production of *cultural* value, there would be expected to be zero substitutability between cultural and physical capital in respect of its cultural output, since no other form of capital is capable of providing this sort of value.

We turn now to the possibility of specifying sustainable development paths for cultural capital, taking account of its particular characteristics. For simplicity we assume a quasi-strong form of sustainability by defining it in terms of the cultural capital stock only, thus ruling out questions of substitutability with other types of capital. A possible model is summarised as follows.

(1991).

⁵ For further discussion of this model and of valuation problems more generally, see Pearce (1993), especially pp. 44-53.

Assume a closed economy which possess a stock of cultural capital K with an aggregate value to society of $V = V(K^e, K^c)$ where K^e is the economic valuation of the capital stock at a given point in time, measured in financial terms, and K^c is the cultural valuation of the stock measured according to some agreed system of units reflecting the significance or worth to society of the cultural asset. During any time period⁶, K produces a flow of income y measured in both monetary-value and cultural-value terms. So, for example, if the capital assets in question are artworks in a museum, or historic buildings or sites, these income flows might be generated by displaying the artworks for people to look at, or by opening the buildings and sites to tourists. In each case a stream of monetary income is generated which accrues to the immediate owners of the asset in question; at the same time a stream of “cultural income” is also generated, some of which accrues to society at large as public-good benefits arising from the existence of these items of the cultural capital stock.

Assume that production takes place according to the following one-period production functions:

$$y^e = F(X, K^e) \quad (2a)$$

$$y^c = F(X, K^c) \quad (2b)$$

where X = a vector of other inputs (labour, operating capital, etc.) whose level is determined by the policy-maker, and where F , for convenience, has the usual properties of constant returns to scale and diminishing marginal product.

We assume y^c is completely consumed in the period in which it is produced, whereas y^e can be allocated to current consumption (C) or to investment (I) in the maintenance of K , the existing capital stock⁷. Then

$$y^e = C + I \quad (3)$$

⁶ For simplicity, we omit time subscripts throughout.

⁷ For the present we ignore the possibility of investment in new capital stock (see further below).

For given X we can write

$$y^e = rK^e \quad (4)$$

where r is interpreted as the economic rate of return on the capital stock. For simplicity, let us assume that all the income is re-invested, hence

$$I = rK^e \quad (5)$$

Similarly, for given X we can write

$$y^c = \alpha K^c \quad (6)$$

where α is defined as a “cultural appreciation parameter” measuring the extent to which members of society, in a given time period, understand and appreciate the significance or importance of K . (Thus for a society that cared nothing for its cultural assets, $\alpha = 0$ and no cultural income would accrue.)

From the viewpoint of sustainability, we are interested in the rate of change in the capital stock, from one period to the next, measured in both economic and cultural value terms. Changes over time in the level of K^e are caused by several different factors:

- exogenous influences affecting the price of the stock (e.g. for an art museum’s collection, these influences arise as a result of movements in the art market);
- depreciation caused by wear and tear (e.g. from damage to a cultural site caused by tourists) or by catastrophic events (e.g. war);
- conservation or restoration investment undertaken with the aim of maintaining the asset in good condition.

Let the first of these factors be measured by m , the rate of price appreciation (which could be negative) and let the second be measured by d , the rate of depreciation

(always negative). The third factor is simply I as defined above. Without further ado we can write

$$\dot{K}^c = m - d + r \quad (7)$$

and note that economic sustainability of the capital stock, defined as $\dot{K}^c = 0$, will require

$$(m + r) = d \quad (8)$$

Before turning to sustainability in the *cultural* value of the capital stock, we note the following assumption. We assume that the rate of change of the appreciation parameter α is a function of the level of “cultural income” forthcoming in any period. In other words, the greater are the cultural benefits flowing from a given stock of cultural capital, the faster will the community’s cultural appreciation grow. In simpler words, the more people attend art museums, visit heritage sites, perform traditional cultural ceremonies, etc., the more “switched on” will the community become to their own cultural inheritance⁸. Correspondingly, the less these benefits are realised, the smaller will α become. In fact it is quite possible for α to be negative, that is, for cultural appreciation to decay if cultural participation falls below a given level. Specifically, let us assume there is a critical level of the flow of cultural value in a given time period, \hat{y}^c below which α falls below zero, i.e. we assume

$$\dot{\alpha} > 0 \text{ if } y^c > \hat{y}^c, \quad \dot{\alpha} = 0 \text{ if } y^c = \hat{y}^c \text{ and } \dot{\alpha} < 0 \text{ if } y^c < \hat{y}^c$$

Now we can define the factors affecting the level of K^c in a given time period. We assume two factors are relevant:

- the rate of change of α as discussed above; and

⁸ Recall that we are assuming a closed economy, so the imposition of foreign cultural influences does not arise.

- the amount of maintenance investment I .

The reason for including the second of these factors should be readily apparent – at least some components of the cultural value of historic buildings, artworks, etc. will decline if they are neglected and allowed to fall into disrepair (i.e. if $I = 0$).

Accordingly we can write

$$\dot{K}^c = f(\dot{\alpha}, I) \quad (9)$$

where $f'(\dot{\alpha}) > 0$ and $f'(I) > 0$. We can now specify that cultural sustainability will require $\dot{K}^c \geq 0$. We note that implementation of this sustainability rule would require knowledge of the function f in (9) and in turn the critical value of \hat{y}^c .

It can be argued from a cultural viewpoint that it is *cultural* sustainability that matters in this economy. If this is so, the problem can be framed as follows. For a given initial stock of K with economic and cultural value of K^e and K^c respectively, the decision problem is to choose X and I such that the cultural sustainability condition holds. In other words, in any given period society would need to allocate a sufficient level of resources to utilising its cultural capital stock rather than to other (non-cultural) purposes, and would need to re-invest a sufficient level of the financial income stream so generated in the conservation and maintenance of the stock, in order to ensure no deterioration in the cultural value of the stock in the next period.

Finally we turn to the matter of new investment in cultural capital. This refers to such actions as the creation of artworks, the construction of new buildings that may someday be regarded as “historic” and having particular cultural value, the cultivation of emerging cultural traditions that in due course will be handed on to the next generation, etc. Here it might be noted that the parallel with natural capital begins to break down. These forms of new cultural capital are not like renewable resources which have an inherent capacity for self-regeneration. They have to be created by deliberate production processes.

The incorporation of this new cultural investment into the above sustainability model raises the question of substitutability *within* forms of cultural capital; for example, to what extent is new art capable of delivering the same cultural benefits as old art? Thus, whilst in principle there may be no formal difficulty in simply allowing for increments in the capital stock arising from new investment to be included in the above model, the specification of the cultural value yielded by the new capital goods presents some problems. At one level these problems are no different from those of measuring cultural value elsewhere in the model; however, uncertainties surrounding evaluation criteria in contemporary culture may make measurement even more difficult than in the case of inherited cultural capital, when at least judgements have had time to mature and some consensus can be seen to have been reached.

Moreover there is a further problem with the introduction of new investment into the system – the difficulty of identifying how much of new artistic and cultural output will in fact add to the capital stock. In the case of built heritage, for example, a recognition of cultural significance may take some time to evolve – who is to know which modern building, large or small, will be regarded as culturally important in fifty or one-hundred years' time? In regard to artworks, the transience of contemporary art presents a similar problem, since much currently produced art will sink without trace; only a very small proportion of works produced at any given time are likely to survive to become part of longer-term capital accumulation. In these circumstances, it is probably appropriate to regard a certain proportion – perhaps a majority – of contemporary art as consumption goods, or at least as investment goods that are fully amortised in the current period.

Overall, the approach adopted in specifying a sustainable development path in this model raises again the well-known debate about whether the intergenerational aspects of sustainable development are a matter of efficiency in intertemporal resource allocation, or whether they are matters of fairness or equity in the present generation's treatment of its successors. It might be observed that the admission of cultural value as an additional element in the picture does not change the basic propositions involved. The preservation of cultural capital for the benefit of future generations can be just as much a question of efficiency or equity in the allocation of resources producing *cultural* benefits as it is in the case of economic return.

5. Conclusions

This paper has reviewed some aspects of the evolving debate about the role of natural capital in the economy, and has discussed the specification of weak and strong sustainability rules as criteria for evaluating development paths. Given the parallels between natural and cultural capital, it is intuitively plausible to extend the analysis of sustainability in ecological terms to embrace the phenomenon of cultural sustainability, a concept that to date has tended to have rather more rhetorical than analytical substance. Nevertheless, while the theoretical concept of a culturally sustainable development path defined according to explicit criteria may be an appealing one, it remains operationally constrained until robust value-assessment methods can be devised.

It is suggested that a step in this direction might be to seek aggregate cultural indicators providing a first approximation to levels and changes in the cultural capital stock, along the same lines as Pearce and Atkinson (1993) did for natural capital. Of course this is more easily said than done; efforts to construct cultural indicators have some particular problems of their own (McKinley, 1998; Pattanaik, 1998), and quantification is especially difficult because of the unavailability of suitable data on cultural resources for any country, let alone on an internationally comparable basis between countries.

References

- Barbier, Edward B. *et al.*, 1994. *Paradise Lost? The Ecological Economics of Biodiversity*, London: Earthscan.
- Costanza, Robert and Herman E. Daly, 1992. "Natural capital and sustainable development", *Conservation Biology* 6(1):301-311.
- Dasgupta, P.S. and G.M. Heal, 1979. *Economic Theory and Exhaustible Resources*, Cambridge: Cambridge University Press.
- Ecologically Sustainable Development Working Groups, 1991. *Final reports*, (9 vols.), Canberra: Australian Government Publishing Service.
- El Sarafy, Salah, 1991. "The environment as capital", in Robert Castanza (ed.) *Ecological Economics: the Science and Management of Sustainability*. New York: Columbia University Press, pp. 168-175.
- Garcia Mira, Ricardo *et al.* (eds.), 2003. *Culture, Environmental Action and Sustainability*. Göttingen: Hogrefe and Huber.
- Hartwick, John M., 1977. "Intergenerational equity and the investing of rents from exhaustible resources", *American Economic Review*, 67(5): 972-974.
- Hartwick, John M., 1978. "Substitution among exhaustible resources and intergenerational equity", *Review of Economic Studies*, 45: 347-374.
- Hartwick, John M., 1995. "Constant consumption paths in open economies with exhaustible resources", *Review of International Economics*, 3(3):275-283.
- Holden, John, 2004. *Capturing Cultural Value: How Culture Has Become a Tool of Government Policy*. London: Demos.
- Hutter, Michael and David Throsby (eds.), 2005. *Beyond Price: Value in Culture, Economics and the Arts*, New York: Cambridge University Press, *forthcoming*.
- Jansson, Ann Marie *et al.* (eds.), 1994. *Investing in Natural Capital – the Ecological Economics Approach to Sustainability*. Washington DC: Island Press.
- Krockenberger, Michael, Peter Kinrade and Rob Thorman, 2000. *Natural Advantage: a Blueprint for a Sustainable Australia*. Melbourne: Australian Conservation Foundation.
- McKinley, Terry, 1998. "Measuring the contribution of culture to human well-being: cultural indicators of development", in UNESCO, *World Culture Report* (1998): 322-332.
- Nassauer, Joan Iverson, 1997. "Cultural sustainability: aligning aesthetics and ecology", in Joan Iverson Nassauer (ed.), *Placing Nature: Culture and Landscape Ecology*, Washington DC: Island Press, pp. 275-283.

- Neumayer, Eric, 2003. *Weak versus Strong Sustainability: Exploring the Limits of Two Opposing Paradigms* (2nd edn.). Cheltenham: Edward Elgar.
- Pattanaik, Prasanta K., 1998. "Cultural indicators of well-being: some conceptual issues" in UNESCO, *World Culture Report* (1998): 333-340.
- Pearce, David W., 1993. *Economic Values and the Natural World*. Cambridge MA: MIT Press.
- Pearce David W. and Giles D. Atkinson, 1993. "Capital theory and the measurement of sustainable development: an indicator of 'weak' sustainability", *Ecological Economics*, 8: 103-108.
- Pearce, David W. and R. Kerry Turner, 1990. *Economics of Natural Resources and the Environment*. Baltimore: Johns Hopkins University Press.
- Rana, Ratna, S.J.B. (ed.), 2000. *Culture in Sustainability of Cities* (Proceedings of an International Conference, Ishikawa International Cooperation Research Centre, Kanazawa, Japan, 18-19 January).
- Shockley, Gordon, 2004. "Government investment in cultural capital: a methodology for comparing direct government support for the arts in the US and the UK", *Public Finance and Management*, 4(1): 75-102.
- Solow, Robert, 1974a. "Intergenerational equity and exhaustible resources", *Review of Economic Studies*, 41 (Symposium): 29-46.
- Solow, Robert, 1974b. "The economics of resources or the resources of economics", *American Economic Review*, 64(2): 1-14.
- Solow, Robert, 1986. "On the intergenerational allocation of natural resources", *Scandinavian Journal of Economics*, 88(1):141-149.
- Strange, Ian, 1999. "Urban sustainability, globalisation and the pursuit of the heritage aesthetic", *Planning Practice and Research*, 14(3): 301-311.
- Throsby David, 1997. "Sustainability and culture: some theoretical issues", *International Journal of Cultural Policy*, 4: 7-20.
- Throsby, David, 1999. "Cultural capital", *Journal of Cultural Economics*, 23(1-2): 3-12.
- Throsby, David, 2001a. *Economics and Culture*. Cambridge: Cambridge University Press.
- Throsby, David, 2001b. "The environment, sustainable development and the Australian economy", in John Nieuwenhuysen *et al.* (eds.), *Reshaping Australia's Economy: Growth with Equity and Sustainability*. Melbourne: Cambridge University Press, pp. 111-129.

Victor, Peter A., 1991. "Indicators of sustainable development: some lessons from capital theory", *Ecological Economics*, 4:191-213.

World Commission Environment and Development, 1987. *Our Common Future*.
Oxford: Oxford University Press.

World Commission on Culture and Development, 1995. *Our Creative Diversity*.
Paris: UNESCO.

Yencken, David and Debra Wilkinson, 2000. *Resetting the Compass: Australia's Journey Towards Sustainability*, Collingwood: CSIRO Publishing.