

ARE BLUE WHALES REALLY SIMPLY VERY LARGE CUPS OF COFFEE?

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Any intervention in the water cycle has two opportunity costs. Firstly, the use of water for one purpose typically either reduces its value for another use, or increases the cost of using that water for an alternative purpose. In a strict sense, since water is a non-depletable resource and because most water uses are gravity fed, this opportunity cost is an energy cost as the use of the water has resulted in a reduction in its potential energy, or it will require a significant input of energy to remove pollutant loads from that water before it can be used for other purposes. Secondly, any change in water quantities or quality, except in confined aquifers, necessarily has an environmental opportunity cost since ecosystems have developed around the available water balance. Thus, Agenda 21 specifies the recognition of this opportunity cost as a defining characteristic of sustainable development.

Since the core of economics is the assertion of just such an opportunity cost, this should mean that economics will play an increasingly pivotal role in decision making about water. In particular, since many such decisions involve a direct trade-off between human use of the water and the environments sustained by that water, in evaluating environmental losses. The question is, therefore, whether economics is up to the task. There is probably agreement that the economic valuation of use values, including recreational value, which result from human use of or access to some water related resource, do not present a major problem.

The problems arise in evaluating environmental gains or losses which result in no change in human use value. Economists have been happy to accept that we do value the environment for reasons other than its use or functional value; this other motivation has been variously labeled as 'existence', 'passive use' or 'nonuse' value. The questions which arise are two-fold:

- can this nonuse value be measured; and
- is it really an economic value?

In the economic literature, these questions arouses bitter debate; some economists arguing that it cannot be measured and, if it could be reliably measured, then it is not properly part of economic analysis. Others argue that it is both part of economic analysis and it can be measured relatively easily. Much the argument has therefore revolved about the validity and reliability of the techniques, and particularly about the Contingent Valuation method, which are used to evaluate these nonuse values, and the extent and nature of 'biases' resulting from the Contingent Valuation method. I am going to argue that the effect of those attacks is not upon the Contingent Valuation but on conventional economic theory and the problem is a deficit of theory rather than just being a methodological problem. Thus, that neoclassical economics is both a parochial

form of analysis and also inadequate to account for the importance which people attach to the environment for reasons other than the use they make of it.

I will argue that neoclassical economics is better termed ‘Anglo-Saxon’ economics because in it are embedded the assumptions about entitlements and obligations which are the basis for Anglo-Saxon property law. It fails to encompass the subtle distinctions between such entitlements and obligations embodied in other legal systems, notably Roman law and usufructory systems, or the concepts of duties under Islamic law. Rather than providing a universal framework for analysis, it is highly parochial.

In addition, the neoclassical economic model with its concept of efficiency as optimality provides only a stopping rule. In practice, with limited resources, the question is often where to start, particularly when considering investment programmes which may take twenty years to complete. In such circumstances, efficiency is a moving target over time and one which may be impossible ever to attain. What is required instead is a way of identifying the immediate priorities for action.

Thirdly, neoclassical economics is based on a model of individual choice for marketed goods. This is then assumed to provide a General Theory of Choice which can be extended to all goods whether or not they are marketed and to choices by households and societies. However, in addition to the conventional distinction between private and public goods, a distinction also needs to be drawn on the supply side of the equation; some goods either only be provided by a group acting together (**Figure 1**). Blue Whales can, for example, only be preserved by international agreements not by individuals acting in isolation. In other cases, some goods are more efficiently provided as a collective good than as an individual good. This is often the case in water projects where a piped water system is frequently cheaper than either drilling wells or buying water from a tanker.

Figure 1 Supply and consumption options

		Consumption	
		private	public
Supply	individual	cups of coffee, gathering wild berries, flood proofing, cesspits, wells	lighthouse
	collective	canal irrigation, hunting large animals	structural flood protection, national defence, the preservation of Blue Whales

The neoclassical economic model thus makes two sweeping presumptions:

- that individuals approach choices about the provision of collective goods in the same way as about individual goods; and
- they believe that society should make choices about the provision of both as if they were the same.

There is no evidence than either presumption is true.

In exploring the nature of nonuse value, we have also found that people see many of these questions in moral terms. For example, they believe that we ought not to pollute. This does not reduce the force of the scarcity of resources as a constraint but it does redefine the issue. Since the idea of an optimal level of immorality is a contradiction in terms, the issue is once again where to start; what is the order of priorities that should be adopted given the resources available today?

Secondly, what people seem to want and therefore value is the principle rather than holding these values for individual instance. They value the principle of unpolluted rivers rather than starting by putting a value on each and every river.

The nonuse value of river water quality improvements

As part of the research upon which to base a methodology to evaluate the benefits of improvements in surface waters, FHRC was asked by the Foundation for Water Research to develop and apply a technique for evaluating the nonuse value of such improvements. Respondents were asked to rank four alternative programmes of improvements in river water quality where these programmes varied in the proportion of rivers which would reach good, moderate or poor water quality status at the end of the programme. The three water qualities were defined in terms of the plants and wildlife they could support since other research had shown that these were the critical determinants both of people's perception of water quality and of their preferences. The programmes differed in the degree to which they focused attention on improving the poor quality rivers or on further improving rivers of moderate, and in the proportions of those rivers which were improved. Respondents were then asked whether they were prepared to pay for each of the four programmes and, if so, how much they were prepared to pay each year. Consequently, it was then possible to calculate the collective amount people were prepared to pay in order to improve one kilometer of river from one water quality standard to another.

It was also concluded from this and previous studies that the way in which people approached the decision on whether and how much to pay for water quality improvements is in the form:

ought I to pay * (value to me, value to others) * what can I afford to pay

Conclusions

Blue Whales are not very large cups of coffee and whilst the neoclassical economic model is entirely adequate for evaluating cups of coffee, it fails to provide an adequate system of analysis for Blue Whales and other instances of public, collective goods. We do not yet fully understand how people approach choices about such goods and how they believe society ought to make choices about them. We also need an economics which is not parochial and based upon a single system of jurisprudence.