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A SUGGESTED APPLICATION OF OCCAM'S RAZOR

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The concept of merit goods first formulated by Richard Musgrave has not found a comfortable resting place in the normative public finance literature. Musgrave argues that there is a fundamental distinction between merit and social wants:

The type of public wants dealt with under social wants are wants whose satisfaction should be subject to the principle of consumer sovereignty. The basic rule is that resources should be allocated in response to the effective demand of consumers, determined by individual preferences and the prevailing state of distribution....

The satisfaction of merit wants cannot be explained in the same terms as the satisfaction of social wants.... Such wants are met by services subject to the exclusion principle and are satisfied by the market within the limits of effective demand. They become public wants if considered so meritorious that their satisfaction is provided for through the public budget, over and above what is provided for through the market and paid for by private buyers. The satisfaction of merit wants, by its very nature, involves interference with consumer preferences....

In the case of social wants, the problem is one of giving effect to individual evaluations.... In the case of merit wants, however, the very purpose may be one of interference by some, presumably the majority into the want patterns of others. [9, pp. 13-14.]

In this paper I will argue that there is no fundamental difference between social and merit wants; that the latter give rise to the same problems of exclusion and revelation as the former; and that the satisfaction of merit wants involves no more of a violation of consumer sovereignty than does social wants. In short, I will argue that the concept of merit goods should be abandoned.<sup>1</sup>

I will attempt to show that the theoretical confusion concerning "merit goods" has arisen out of a failure to rigorously define the concept of consumer sovereignty. In Part I, therefore, I will present what I believe to be the most sensible definition of consumer sovereignty and review briefly the major assumptions of conventional welfare economics discussions. In Part II I show formally that there is no difference between social and merit wants. (The similarity is independent of the definition of consumer sovereignty.) In Part III I consider alternative definitions of consumer sovereignty.

#### I. CONSUMER SOVEREIGNTY

I define consumer sovereignty as the belief that social welfare is a function of individuals' welfare or utility. That is, in its most general form:

$$W=W[U^i(X_a)] \quad (i=1\dots s; a=1\dots z) \quad (1)$$

where  $X_a$  is the list of all variables that affect individuals' welfare. A second value judgment common to most Western economists is that if one individual's utility increases, while the utility of all other individuals remains the same, social welfare increases. These two values based on an individualistic ethic are the starting point for this analysis.<sup>2</sup> If they are accepted, it follows that a necessary condition for the maximization of social welfare is that no individuals' utility can be increased without diminishing the utility of at least one other individual. Social states which satisfy this condition are socially efficient, or Pareto Optimal, states.

The conditions for social efficiency can be expressed mathematically if (1) is maximized subject to a possibility constraint:

$$P(U^i)=0 \quad (i=1\dots s) \quad (2)$$

where (2) defines in implicit form the possible relationships of individuals' levels of well-being. If (1) is maximized subject to (2) the following is obtained:

$$W_{U^i}/W_{U^j}=P_{U^i}/P_{U^j} \quad (j=1; i=2\dots s) \quad (3)$$

where  $W_{U^i}=\partial W/\partial U^i$ . The right-hand side of (3) represents the marginal rate of social transformation (among utilities), while the left-hand side represents the marginal rate of social substitution. Let  $j$ 's utility be a numeraire. Then (3) says simply that the marginal gain in social welfare of increasing  $i$ 's utility must be equal to the marginal cost, i.e.,  $j$ 's forgone utility as evaluated by society.

In this very general form, equation (3) provides no help in formulating social policy. In order to derive any policy guidelines it is necessary to make some assumptions about (1) individuals' utility functions, (2) the possibility function, and (3) the relative weights society places on all individuals' welfare. All welfare economics discussions entail explicit or implicit assumptions about these three functions. Most of my discussion will focus on assumptions about individual utility functions. Although most economists probably recognize that welfare depends on factors other than those with which the economist has been concerned traditionally, they customarily assume, either explicitly or implicitly, that for small changes the "noneconomic" factors are independent of the "economic" ones.<sup>3</sup>

Given this assumption a partial analysis is feasible. Since by assumption some elements of  $X_a$  which affect general welfare are neither affected

by nor affect economic welfare, they can be ignored. Consequently an economic welfare function like the following may be formulated:

$$W=W[U^i(X_e)] \quad (i=1\dots s; e=1\dots n) \quad (4)$$

where  $X_e$  is the list of variables that affect individuals' economic welfare.

A very special and familiar case of (4) is obtained by stipulating that each individual's utility is independent of all variables in  $X_e$  except those characterizing his own consumption of goods and services. Given this assumption, equation (4) can be rewritten as follows:

$$W=W[U^i(X_e^i)] \quad (5)$$

where  $X_e^i$  is the  $i$ -th individual's consumption list. It is also common to assume that for economic analysis the utility possibility constraint (2) derives from an underlying possibility function of the following kind:

$$F(X_e)=0 \quad (X_e = \sum_{i=1}^s X_e^i) \quad (6)$$

In this case, given well-behaved consumption and production functions, the best possible state of the world can be described as follows:

$$U_g^i/U_r^i = F_g/F_r \quad (i=1\dots s; r=1; g=2\dots n) \quad (7)$$

$$W_i U_r^i / W_j U_r^i = 1 \quad (j=1; i=2\dots s; r=1\dots n) \quad (8)$$

The first set of equalities in (7) are the familiar necessary conditions for Pareto Optimality. The second set of equalities state that the marginal social utility of the same good or service must be equal for each individual. They contain the interpersonal utility comparisons ( $W_i$  vis-à-vis  $W_j$ ) that must be made to lead to a unique solution.

Equation (5) is just a special case of (1), (6) implies a special case of (2), and (7) and (8) are a special case of (3). But while (3) is devoid

of policy implications, the policy implications of (7) and (8) are quite clear once it is recognized that perfect competition leads to the conditions specified in that equation.

The assumption that individuals derive utility only from their own consumption of goods and services is a crucial one in the demonstration that perfect competition leads to economic efficiency or Pareto Optimality. Once it is admitted that externalities or public goods exist, (5) must be modified. An externality is present when the utility of one individual is affected by the actions of other individuals. This discussion will be confined to consumption externalities which exist when the consumption of a good by one individual affects the utility of another individual. To the extent that such interaction exists, the good in question is a public good because the first individual's consumption is shared by the second. Formally, externalities may be treated as giving rise to separate pure public goods. Thus, denoting the list of public goods by  $X_p$ , (5) must be reformulated as follows:

$$W=W[U^i(X_e^i, X_p)] \quad (e=1\dots n; p=n \ m) \quad (9)$$

If the production possibility function is broadened so as to include public goods as follows:

$$F(X_{e+p})=0 \quad (X_e = \sum_{i=1}^s X_t^i; X_p = X_p^1) \quad (10)$$

the best state of the world can be described as follows:

$$U_g^i / U_r^i = F_g / F_r \quad (i=1\dots s; r=1; g=2\dots n) \quad (11)$$

$$\sum_{i=1}^s U_{m+g}^i / U_{m+g}^i = F_{m+g} / F_r \quad (i=1\dots s; r=1; g=2\dots n) \quad (12)$$

$$W_i U_h^i / W_j U_h^j = 1 \quad (i=1\dots s; h=1\dots n \ m) \quad (13)$$

While (11) and (13) are identical to (7) and (8), (12) adds a new element.

Perfect competition cannot lead to a situation which satisfies (12). Since no individual can be excluded from consuming whatever amount of the public good is available to all, all individuals will have an incentive to demand less of the good than they really desire. Consequently, the output of a public good will be suboptimal if left to the private market. This is the rationale for government provision of public goods.<sup>4</sup>

While the equations in (11), (12), and (13) are more general than those of (7) and (8), they are still a special case of (3). Moreover, while a good part of the public finance literature is devoted to the analysis of externalities of public goods, most of this work unfortunately contains the implicit assumption that externalities and public goods arise only out of the objective nature of the goods themselves. Musgrave states this explicitly: "Whereas recognition of consumer sovereignty is an ideological matter, externality is a technical issue." [8, p. 19.]

It is the latter part of this contention that I deny. This assumption makes (11), (12), and (13) a more special case of (3) than need be. In the following section I attempt to build upon and broaden the externality and public goods concept by suggesting that public goods may arise out of individuals' values as well as the nature of goods themselves. Alternatively my argument may be viewed as: (1) a rejection of the assumption that economic variables do not affect noneconomic ones which affect welfare, or (2) an attempt to selectively incorporate some of the "noneconomic" variables into welfare economics analysis.



## II. VALUES AND UTILITY FUNCTIONS

In this section I argue that values may be treated like preferences for one's own consumption in that they give rise to wants which may be satisfied by (public) goods.

While some values may be dismissed for the purposes of most economic analysis, other values should not be so dismissed. In medical economics, the human capital or maximizing output of GNP criterion for evaluating health programs is based on the assumption that individual values may be ignored. But this approach has some disturbing implications, as Wiseman indicates:

The young (with the longest expectancy of working life), the basically fit, and those with the highest expected earnings, would provide the highest rate of return and would therefore be given access to medical resources on the most favorable terms. The old, in contrast, constitute a liability....Indeed, if growth is the sole aim of our policymaker, there might be a strong case for providing only one medical service for those who can no longer work: euthanasia....[17, p. 130.]

The fact that few if any of us would accept these implications is an indication that we value things other than output of goods and services. The following observation by Taylor is especially relevant:

Human capital calculations would indicate that medical care to persons over 65 is relatively unimportant. Politicians knew full well that such care was extremely important not only to the recipients but to the [voting age] children of the recipients. Nor is it mere chance that the only new major program proposed by the Administration in 1968 was the child and maternal health program, even though women and children do not count heavily in human capital calculations. [16, p. 7.]

The fact that we do support programs which promote smaller measurable output returns than alternative programs indicates that (1) individuals derive utility from and are willing to pay for programs that satisfy their

wants arising from values and (2) because these programs entail opportunity costs<sup>5</sup> and satisfy wants, they can be treated as economic goods. Finally, it is appropriate to treat goods which satisfy these wants, like other goods, as arguments in individuals' utility functions. Thus (9) should be amended as follows:

$$W=W[U^i(x_e^i, X_p, X_v)] \quad (e=1\dots n; p=n+m; v=n+m+d) \quad (14)$$

where  $X_v$  is the list of goods which satisfy wants arising out of values. The utility individuals derive from any good,  $x_t$ , related to a particular value,  $t$ , will vary among individuals, [ $t=(n+m)+1\dots d$ ]. Since values conflict some individuals will derive disutility from the consumption. If  $U_{x_t}^i > 0$  ( $U_{x_t}^i < 0$ ) the individual derives utility (disutility) and is willing to pay something for the good (to avoid consuming it). If  $U_{x_t}^i = 0$ , the individual is indifferent.<sup>6</sup>

Values give rise to pure public wants. These cannot be satisfied efficiently through the market because everyone shares equally in the consumption of the goods which satisfy them. An example will help clarify the preceding discussion. Individuals may value a more equal distribution of income than that produced by the market. In this case greater income equality is a good. But since there will be only one degree of income equality in society everyone consumes this good. Exclusion is impossible. It is a pure public good. Any individual who unilaterally transferred his income to others would find that his efforts made little difference in the overall distribution. Since whatever he does will make little difference he will have an incentive to do little or nothing. Because this is true of all individuals redistribution produced by the market--charity--will be suboptimal.

Since goods which satisfy wants arising from values are pure public goods, the necessary conditions for efficiency are formally identical to those derived by Samuelson. Thus the following set of equations should be added to (11), (12) and (13):

$$\sum_{i=1}^S U_t^i / U_r^i = F_t / F_r \quad (r=1; t=(n+m)+1 \dots d) \quad (15)$$

where  $r$  is a numeraire private good. The right-hand side of (15) is the marginal rate of transformation in production between  $t$  and  $r$ , or the marginal cost to society of producing  $t$ . The left-hand side is the summed marginal rates of substitution between  $t$  and  $r$  for all individuals in society, or society's marginal evaluation of consuming  $t$ . The equation simply states that a necessary condition for efficiency is that benefits and costs be equal at the margin.

Conflicting values can be incorporated into the analysis. If individuals derive disutility from  $t$ , the sum on the left side of the equality is reduced, or alternatively the disutility they suffer can be shown on the right side as an additional opportunity cost of producing  $t$ . In principal, those who derive disutility should be compensated. But to do so in practice would create nearly insuperable problems.

It should be clear by now that the set of goods,  $X_v$ , which satisfies wants arising out of individual values is what Musgrave calls merit goods. While the set of goods,  $X_v$ , differs in some ways from the set of goods,  $X_p$ , the differences are not those which Musgrave identifies. The exclusion and revelation problems apply equally to both sets of goods. The efficient levels of production in both cases are determined by the Samuelson conditions. In both cases the attainment of efficiency requires interfering with or modifying independent individual utility maximization. And finally, the production of neither set of goods violates consumer sovereignty as defined in the first section of this paper.

### III. CONSUMER SOVEREIGNTY AND THE LIBERAL ETHIC

I now examine two alternative definitions of consumer sovereignty. In Part I it was assumed that consumer sovereignty could be defined as the belief that the only arguments in a social welfare function were the utilities of the individuals in society. This appears to be the definition most consistent with the way economists use "consumer sovereignty" and with the other kinds of assumptions we normally make. Economists normally profess not to pass judgments on individual tastes. However, it also seems clear that in some cases some economists use "consumer sovereignty" as a synonym for the liberal ethic. In this case consumer sovereignty will be defined in terms of the arguments in individual utility functions.

Any such definition is fraught with difficulties. Before discussing these difficulties, note that there can be conflicts between the liberal ethic and the goal of Pareto Optimality.<sup>7</sup> The liberal ethic postulates that some individual preferences about other individuals' behavior, or consumption, should not count. Formally, an adherent of the liberal ethic has a social welfare function of the following kind:

$$W=W(U^i(X_a),L) \quad (16)$$

where L is the liberal ethic, or a rule that specifies which arguments in individual utility functions are to count, or conversely, to be ignored.<sup>8</sup> L may be viewed as a constraint. If the constraint is operative, i.e., L specifies that some existing preferences be ignored, there will be a conflict between efficiency and the liberal ethic.

Musgrave's merit goods concept does not help to clarify the existence of this potential conflict. If anything it helps to obscure the issue.

For as noted above, what Musgrave calls "merit goods," involve exactly the same questions of efficiency as social goods.

If consumer sovereignty is defined in terms of L, however, it is true that merit goods might violate consumer sovereignty while social goods do not. That depends on how L is defined.

Consider an L, or rule, which specifies that only an individual's own evaluation of his own consumption should count. This rule has the virtue of the greatest objectivity. Unfortunately it rules out social as well as "merit" goods.

Consider another L, which specifies that one individual's evaluation of another individual's consumption of a particular good should count if and only if the externality generated by the latter's consumption was generated by a technological characteristic of the good. A technological externality is one which inheres in the production or consumption of the good per se and is independent of the values and beliefs of individuals. This can be illustrated with an example from the medical-care field. The externality which arises from the fact that diseases are communicable is technological, while the externality that arises from the fact that individuals value each other's health in an altruistic fashion is a valuable externality.

This would appear to be the definition of consumer sovereignty implicit in Musgrave's analysis. There are, however, several problems with this definition. First, to continue with the medical-care example, who is to judge whether an individual derives utility from someone else's consumption of medical care because the former's health depends on that of the latter, or because the former enjoys seeing the latter healthy. Second, how is such a judgment to be made? And most important, if the judge

determines that the externality is a valuative one, should we then rule out subsidization of medical care? Consider two social states: one with subsidization of health care based on valuative externalities and one without subsidization though the externality existed. I submit that a great number of individuals, including economists, would believe the first state to be preferable to the second. In other words, they would not accept this definition of the liberal ethic.

Finally, consider an L, or rule, which specifies which individuals' evaluation of other individuals' consumption should count in terms of particular goods. Most of us would probably accept some such rule. For example, consider two social states: one with restriction or taxes on the sale of dirty and/or subversive books based on the preferences of both prudes and/or super-patriots and the rest of us and designed to achieve Pareto Optimality; and another with no restrictions on the sale of these kinds of books because the preferences of the former group(s) were ignored. Most academics, at least, would probably believe the second state to be preferable to the first.

The biggest weakness of the above pragmatic definition of the liberal ethic is that it is the most subjective. Individuals will differ on which goods to include in the list specifying only own evaluations should be counted. The virtue of this definition is that, as noted above, most individuals would probably want to include one or more goods in the list. In other words, in principle, they would accept this definition of the liberal ethic.

But if this definition of the liberal ethic is accepted and if consumer sovereignty is used as a synonym for the liberal ethic, it follows that only some of what Musgrave calls merit goods (bads) violate consumer sovereignty. Which ones violate consumer sovereignty will depend on the list of goods included in this pragmatic definition of the liberal ethic.

Whether consumer sovereignty should be defined in terms of (1) or (16) is in part a matter of taste. I believe most economists probably had (1) in mind in most of their writings. (Or perhaps most economists have been slightly confused on the issue.) What is important, in any case, is that (1) and (16) are not the same. Efficiency and liberalism are not the same; in fact, they are probably incompatible.

#### IV. CONCLUSION

The foregoing discussion of alternative definitions of consumer sovereignty should not obscure the fact that irrespective of how consumer sovereignty is defined, the economic distinction which Musgrave attempted to make between social and merit goods does not exist. The exclusion and revelation problems apply equally to both. In both cases, efficiency requires interfering with individual independent utility maximization.

Perhaps the greatest shortcoming of the merit-good concept is that it has reinforced the tendency of economists to limit their concern with values to the superficial recognition that the efficient solutions they describe may be subject to modification if certain values are considered. Only recently have a few economists attempted to discuss efficient ways of achieving alternative values.<sup>9</sup>

For example, is a free health-care system the most efficient method of achieving a minimum level of provision for all? Is it an efficient method of achieving equal access to health care? Do the implications for efficiency of these two values differ? In attempting to answer these questions, not surprisingly, they treated what Musgrave would call a merit good as what he calls social good.

While economists cannot resolve value conflicts, as Samuelson has observed:

It is a legitimate exercise of economic analysis to examine the consequences of various value judgments, whether or not they are shared by the theorist, just as the study of comparative ethics is itself a science like any other branch of anthropology. [13, p. 220.]

While we can do no more, we should do no less. For most important social policy issues involve value conflicts. And the economist is better equipped than most to deduce the implications for efficiency of alternative values.



## NOTES

<sup>1</sup>For an alternative interpretation of the merit good concept see Head [6].

<sup>2</sup>The analysis in this section follows closely those of Samuelson ([13], [14]) and Bergson [1].

<sup>3</sup>Both Bergson [1] and Pigou [12] explicitly formulate the problem in this manner. I leave undefined the terms "economic and non-economic" factors because, as I will show, the definition is part of the issue.

<sup>4</sup>Buchanan and Kafoglis [2] have demonstrated that in the case where the consumption of a good by A is more than a perfect substitute for B's consumption of that good, public provision may actually lead to less output than market arrangements.

<sup>5</sup>In some cases, the opportunity cost might be an alternative value foregone.

<sup>6</sup>I assume throughout that utility functions are continuous and twice differentiable. This is obviously an inappropriate assumption with regard to some values and some individuals. Patrick Henry's famous statement "give me liberty, or give me death" suggests an extreme discontinuity in his utility function. But such strong assumptions about utility functions are unnecessary to derive any of the conclusions in the analysis, unnecessarily complicate the analysis, and seem less appropriate for the values I wish to consider.

<sup>7</sup>See Sen [15] for a different and more extended demonstration of this point.

<sup>8</sup>An alternative possibility is to put L as an argument in individual utility functions. In this case, the discussion in Parts I and II requires no modifications.

<sup>9</sup>Pauly's dissertation, "Efficiency in Public Provision of Medical Care" [10] was probably the pioneering work in this field. See also [3, 4, 7, 11].

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