Public Goods and Private Preferences: Are They Reconcilable?

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Abstract

This paper looks at public goods under the angle of individual preferences. The question of public goods can appear simple if the essential questions of *who* wants certain public goods to be produced and *who* is to pay for them are answered simply by "society" and "the state". However, since only *individuals* can actually choose, consume and finance goods, a "public preference" necessary for the choice of public goods production would have to be derived out of individual, *private* preferences. The paper starts by summarizing some basics about utilities and individual preferences. Then, I evaluate two possibilities of deriving a public preference out of personal preferences: first, making interpersonal utility comparisons, which would enable a meaningful "social utility" to be considered, second, preference aggregation, which would enable a "social choice" to be meaningful. I show that both approaches in fact rely on normative elements and briefly discuss these elements. I pursue to evaluate public goods theory under the assumption of individual preferences. First, I consider the definition of public goods and dispute whether it is really meaningful under individualist assumptions. Second, I have a look at the choice of public goods and ask if such a choice can ever be "society's" choice or only that of some individuals. Third, I look at common examples of public goods to see whether they can really be considered as public goods if preferences are individual. The paper concludes that all goods often considered as public goods are in fact goods that serve *some* private interests, and that to call them "public goods" is therefore misleading. At best, such goods are simply "goods wanted by the majority".

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Introduction

The degree of state intervention varies significantly from one country to another, even among OECD countries: tax revenue, for instance, goes from 19% of GDP for Mexico to 50.4% of GDP for Sweden (OECD, 2006). Many activities usually associated with the state are now done successfully by the private sector, while on the other hand state interventions appear in other areas usually associated with the free market. New technologies make some of the problems associated with “public goods” obsolete, for instance by offering new technical possibilities of exclusion (encrypted television), while new problems might also arise with the increasing use of information technologies (intangible non-rival goods such as computer software).

The question of the theory of public goods is, in this context, essential. Is there an objective, scientific way to determine which economic tasks should be carried on by the state? Or is it a matter that can be explained only by democratic or political preferences, justified by normative political theories perhaps, but not by pure economic science?

In certain cases, some of the state’s actions have zero or even negative value for some individuals, who are nonetheless required to pay for them. Dictatorships or other regimes that use the taxpayer’s money to finance terrorist groups, a political police or the torture of dissidents are extreme examples, but in many other cases the state claims to act for the “common good” or in defense of “national interests” while the policies are wanted only by certain powerful lobbies and in fact harm the financial interests of the majority.

In fact, in all cases of the state doing something, some people will lose, while others will gain. Can the gains and losses be compared and aggregated to determine the “common good”, or is a theory of rights necessary to evaluate state actions? In short, are there really public goods related tasks that the state *has to do*, or are there only tasks the state *does* because *some individuals* (either a majority or a powerful minority) want it to?

Private Preferences

The impossibility of interpersonal utility comparisons

Utilities and preferences

By definition of utility, individuals always *act* in a way they expect to increase their utility. Individual preferences are therefore demonstrated by *action*: by choosing one option over another, an individual shows his preference, *given the available options and conditions*, for the option he chooses. An individual might have a whole range of preferences that are not revealed through action, but if they are not revealed, they cannot be objectively observed. We can say with certainty that if a buyer chooses an apple at one dollar over an orange at the same price this means that he prefers this one apple at that price and that moment in time and space to this one orange in the same conditions, but there isn't much else we can say with such a certainty. We don't know if the apple is for his own use or as a gift for another person, that is, if he is raising his own utility by raising that of another person, and cannot infer from this choice that he prefers apples over oranges under all circumstances, nor that he will be happy with his choice *ex post*. Obviously, utilities can be influenced not only by consumption but also in fact by any change in the state of the world that the individual is aware of (Lindahl, 1928, p. 217, Arrow, 1951, pp. 17-18, Hayek, 1948, pp. 13-15).

Similarly, an individual who is threatened by a thief and has the choice between being shot and giving him his pocketbook might demonstrate his preference for the latter, but that doesn't prove his acceptance of the offered choice, nor his agreement to being robbed. In the same way, the fact that an individual chooses to participate in a trade doesn't show that he is happy with all the conditions, be they the prices, the regulations or protectionist taxes involved, or even the voluntary nature of the trade itself. But it does show that he is better off with the trade than without it: to stop him from engaging in it could only limit his options to ones less favored by him.

Ordinality and interpersonal comparison

Preferences and utilities are individual and ordinal. There is no absolute scale and they cannot be quantified. We can say that the buyer expects his utility from buying the apple to be higher than if he had bought the orange, otherwise he wouldn't have acted this way, but we cannot (and the buyer cannot either) infer that "the apple increased his utility by 2.3 units of utility while the orange would have only by 2.1": there is no unambiguous way to measure actual utilities.

If one cannot actually *measure* one's own satisfactions, then he can even less measure the satisfactions of other people, for "introspection does not enable A to measure what is going on in B's mind, nor B to measure what is going on in A's. There is no way of comparing the satisfactions of different people" (Robbins, 1932, p. 140). Therefore, such a comparison would be one that "necessarily falls outside the scope of any positive science" (Robbins, 1932, p. 139). And in particular, "ought it not to be made clear, for instance, that theories of public finance which went beyond tracing the effects of given measures of prices, quantities produced and such-like measurable magnitudes, and which attempted to sum social gain or loss, were not, strictly speaking, economic science?" (Robbins, 1938, p. 637). Interpersonal comparisons of utility were already explicitly rejected by Jevons, who saw "no means by which such comparison can be accomplished" (Jevons, 1871, p. 14).

Debate on impossibility

Waldner (1972) tries to sketch possibilities for "empirically meaningful" interpersonal utility comparisons, by approximating utility with the "degree of interest that an individual has in some alternative" or the "strength of desires" of an individual (Waldner, 1972, p. 90). He then considers that this strength of desire for something could be measured and compared through the willingness to work longer or harder to obtain it, the quickness of the decision to choose it over something else, or even the acquaintance with it (Waldner, 1972, pp. 95-96). He does not, however, prove why these criteria rather than some other should be used to measure and compare utilities, nor how they would exactly and precisely relate to it. He acknowledges that

“our common beliefs about the connections of strengths of desires to other factors may be thought of as forming the vague outlines of such a theory [...] we may be able to use such common beliefs to make interpersonal comparisons of at least a rough nature” (Waldner, 1972, p. 103). However, if there is no scientific and objective way of knowing what these “common beliefs” are, the comparisons have to imply some arbitrary or personal choice about what exactly is to be measured and compared. Waldner seems to rely on the fact that “in a large number of cases there is a fair degree of intersubjective agreement in such judgments” (Waldner, 1972, p. 96) which still isn’t enough for a scientific theory.

Another defense of interpersonal utility comparisons is that of Little (1950), who argues that such comparisons are commonly made, but he admits that “the conflict, which one may go through, between thinking that utilitarianism is nonsensical and thinking that there must be something in it, results from the endeavor to make it too precise. So long as it remains vague and imprecise, and avoids the use of mathematical operations and concepts such as ‘adding’, and ‘sums total’, there is something in it; but it becomes nonsensical if it is pushed too hard in the attempt to make it an exact scientific sort of doctrine” (Little, 1950, p. 53). For further criticism of Little, see Waldner (1972, pp. 91-92). The claim that interpersonal utility comparisons are commonly made, on a daily basis in everyday life is true, but such comparisons rely on personal *opinions*, not scientific measure (Block, 1983, p. 17).

Similarly, Sen (1970) argues in favor of “partial” comparability, using the extreme case of Nero burning Rome as an example (Sen, 1970, p. 395): isn’t it obvious that Nero’s utility gain cannot match the utility loss of all the other Romans? But the fact is, even in such an extreme case, we have no idea of the involved utilities. Most people might agree that it is wrong for one person to increase his utility by lowering that of thousands others, but is their judgment based on vague comparisons of utility? Or rather, isn’t it, or shouldn’t it be, considered as an issue of *rights*?

Hausman (1995) considers that with certain assumptions on utility, utility represents how well individual preferences are satisfied and that there is a top and bottom among those preferences that can be assigned the values zero and one, those extreme values can be compared and so could intermediate values if a cardinal

measure were available. However, even if we admitted these assumptions, there would still be the problem of measuring cardinal utilities: “For unless preferences have enough structure that they can be represented by a bounded cardinal utility function, interpersonal utility comparisons will be impossible—and in fact few people’s preferences can even be represented by an ordinal utility function” (Hausman, 1995, p. 485). Besides, the bounding of utilities to zero and one remains unconvincing. For instance, even a person willing to commit suicide might get even unhappier, and on the other hand, a person might well wish for immortality or other infinite values, leading to obvious problems.

Rothbard (1956) comments on several approaches. However, although he claims avoiding value judgments, his conclusions in fact rely on the assumption of property rights. Arrow (1951, pp. 31-33, pp. 109-118) also discards several other propositions. In particular, the appealing approaches of Neumann and Morgenstern are rejected (Rothbard, 1956, Arrow, 1951, pp. 9-11) and so is the Kaldor-Hicks compensation principle (Arrow, 1951, pp. 34-45). On the latter, it can be added that if the compensation *can* be made but isn’t, the change is merely a gain for some and a loss for others. Even if there is a “net gain” (but in terms of utility, we can never know if there really is one), the change is still not unambiguously “good”.

Hammond (1991) provides a thorough review of the relevant literature, also dismissing most attempts at interpersonal utility comparisons. His own “solution” is to think about the utility of individuals “for society”, based on the values of an “ethical observer” and even including such notions as “how society benefits from creating” an individual. Obviously, the problem of the choice of the ethical observer is not solved, nor that of defining “society”. And the connection to reality of thinking of individuals as being “created by society” seems unclear at best. Such interpersonal comparisons of utility would therefore be entirely arbitrary and would not answer our problem at all.

The non-existence of a public preference

Social choice

Robbins's essay, however helpful on the issue of interpersonal comparisons of utility, leads us to our next problem, which he does not address: "It is clear that society, acting as a body of political citizens, may formulate ends which interfere much more drastically than this [the imposition of certain sanitary requirements or a legal apparatus] with the free choices of the individuals composing it." (Robbins, 1932, p. 144). The problem is, *who is society*? And how can a "body of political citizens" actually *formulate* anything, since only individuals can *act*?

And again: "Thus it is not legitimate to say that going to war is uneconomical, if, having regard to all the issues and all the sacrifices necessarily involved, **it is decided** that the anticipated result is worth the sacrifice" (Robbins, 1932, p. 145, emphasis mine). But *who* decides*? Who* enjoys the result, and *who* has to bear the sacrifice?

There is no scientific, objective and universal definition of the "body politic". The suffrage has certain limits the definition of which is not absolute (Hayek, 1960, pp. 104-106). *Who* is to be allowed to vote? Only males, or males and females? People with a certain revenue only or everyone? People up from age 21, 18, or 16? Should convicted felons be allowed to vote? Citizens living abroad? Foreigners? But which foreigners, all of them, or only certain residents? Last but not least, the citizens or residents of which geographical area should be allowed to vote on a specific issue? For instance, if the majority of the inhabitants of a region want to secede from a country, but the majority of the inhabitants of the whole country are against it, *which majority*, which "body politic" is to prevail? The set of rules on decision-making such as who votes on what, majority or proportional vote, representative, direct, semi-direct, one turn, two turns, etc., has to be determined somehow too.

Constitutions, unanimity and Pareto-optimality

One possibility is that the set of rules on decision-making be determined by a constitution. But a constitution has to be written and accepted by somebody, too: by whom? By what set of rules are the constitutional rules chosen and accepted? To point out the problem by a simple example: in Switzerland, the right to vote for *females* has been approved by a *male* vote. But *who* decided that males only, and not females only for instance, had the right to vote in the first place? Therefore, can the choice of a constitution be considered as a *public,* undisputable choice, or merely as the choice of *some* individuals, individuals with some historical rule-setting power?

There are several possible ways to choose the constitution:

1) By the same rules or similar rules as other laws: parliament majority vote, referendum majority vote, etc. But then, the constitutions can't claim any special status – and the question of the legitimacy of the first vote ever is unresolved.

2) A more restrictive set of rules, such as qualified majority. But the question of the acceptance of the qualified majority rule is still not solved.

3) Some historical choice subject to few changes. But usually even such constitutions can and do change through certain democratic procedures (even in the U.S., for instance, the prohibition of alcohol was established through a constitutional amendment, and abolished with another one).

4) Unanimity approval, the only method that isn't arbitrary in the sense the other are.

Unanimity can be considered as a "public preference" in the sense that it exactly corresponds to all private preferences. However, the question of defining *whom* we are talking about is still to be settled: a public good, for instance, might be used by some foreigners and not all of the inhabitants, and paid only by certain taxpayers.

Therefore, the “unanimity of payers” is not the same as the “unanimity of users”, and neither is synonymous with “unanimity of residents” or “unanimity of citizens”.

If the constitution is unanimously accepted, then it can claim to be a contract. But a contract can bind only those who actually approved it. Therefore, a constitution would have to be unanimously accepted by the whole of the *current* population at all times if it were to be considered a true contract. But most constitutions of today’s states have usually been accepted only by a *minority* of the population, not even a majority and nothing near unanimity, and on top of that a minority of a population often long since dead.

Pareto-optimality, as a condition leading to accept only changes that make at least one person better off and no one worse off, is in this context similar to unanimity. However, both rules suffer from the same problem: they favor the status quo. There might be unfair privileges, powers or unjustly acquired goods in the hands of some (Rothbard, 1981, pp. 549-550), or changes can involve “pecuniary externalities” that would make some groups refuse legitimate changes (Sobel and Holcombe, 2001). For instance, a cut in tariffs, or even the invention of a new product might “harm” certain producers. Changes that are not Pareto-optimal or unanimously accepted, such as apprehending a murderer, have to be justified by a theory of rights. Pareto-optimality or unanimity might be *sufficient* conditions for approving (in the sense of having no legitimate reason to oppose by force) of a change, but they are not *necessary* ones.

Preference aggregation

Are there any other procedures besides unanimity that could be understood as leading to a “public preference”? Since only individuals can act, value, and increase or decrease their utility, a “public preference” would have to be an aggregation of the preferences of the individuals composing a certain “society” or “body politic”. Such an aggregation has been shown to be impossible under reasonable assumptions for more than two alternatives and a society of at least two members (Arrow, 1951, p. 59).

Arrow's theorem, however, allows a majority decision when there are only two alternatives (Arrow, 1951, pp. 46-48). Albeit such a case may be rare, *even* then, the majority rule isn't unambiguous and indisputable: first, there is the necessity of defining the electorate and the majority thereof, which is a problem far from trivial, as we have seen above. Second, it still remains to be shown why a majority decision should have any legitimacy: such a claim implies some theory of rights.

The necessity of a theory of property rights

Unavoidable normative elements

> "All economists recognized that their prescriptions regarding policy were conditional upon the acceptance of norms lying outside economics. All that I was doing was only to recognize that, in a field of generalizations hitherto thought to involve no normative elements, there were in fact such elements concealed" (Robbins, 1938, p. 638).

There is nothing wrong with normative elements. However, they have to be distinguished from pure *wertfrei* economic theory, should be acknowledged as such, and the authors should either admit they are arbitrary or part of their own personal value system (or the value system of some other people), or attempt to present a rational justification for these elements.

If all individuals want to increase their utility, then the issue is: can they do so any way they please? A murderer or a thief *act* because they expect their actions to raise their utility. Is their desire to kill or steal as legitimate as their victim's desire not to be killed or robbed? Is it merely a problem of "reciprocal nature" as Coase (1960) would have it for the case of negative externalities, even when these externalities infringe on previous property rights? Is it merely a question of comparing the highest gain in terms of utility or wealth or "value"?

To attempt to settle the question of rights through some form of utilitarianism or social welfare maximization *still* implies a value judgment in approving that principle. Even if

comparisons of utility or welfare were meaningful, there would still be the necessity of choosing how to use them in taking decisions (Waldner, 1972, p. 89). Even the way of comparing them mathematically involves some value judgment. Maximizing total utility (and choosing the sum of utilities and not their product, choosing total utility and not average utility, etc.) of course also involves a value judgment (Arrow, 1951, p. 4 and p. 11). The same holds true for maximizing "social wealth", with a range of additional issues (Dworkin, 1980).

The question of rights can be phrased as: *what resources can an individual legitimately use to further his own projects, that is, increase his utility?* The "normative elements" relevant to economics can thus be seen as elements deriving from a *theory of property rights*: a theory defining the resources an individual can use.

Even if interpersonal comparisons of utility were possible, there would still be the need for a theory of property rights. Let's suppose, for instance, that we could know with certainty that a thief's or even a murderer's behavior makes him increase his utility by *more* than it does decrease the utility of his victim, or that he is willing and able to pay more to kill the victim than the victim is willing and able to pay to live. Should therefore such behavior be condoned? As Robbins points out:

> "Suppose that we could bring ourselves to believe in the positive status of these conventional assumptions, the commensurability of different experiences, the equality of capacity for satisfaction, etc. And suppose that, proceeding on this basis, we had succeeded in showing that certain policies *had the effect* of increasing "social utility", **even so it would be totally illegitimate to argue that such a conclusion by itself warranted the inference that these policies *ought* to be carried out"** (Robbins, 1932, p. 142, italics original, bold mine).

Theories of property rights

But what theory of property rights to use? I am not going to defend one, merely present two that seem important in relation to the topic of the present paper.

One possibility is to say that an individual can only use his own resources, i.e., all resources not stolen, that is, all resources not taken from a previous legitimate owner without his consent. This implies an universal, and therefore "equal" treatment of all individuals.

> "In the realm of action, at any rate, the real difference of opinion is not between those who dispute concerning the exact area to be designated by the adjective scientific, but between those who hold that human beings should be treated as if they were equal and those who hold that they should not" (Robbins, 1938, p. 641).

However, Robbins's statement is unclear on what he means by "equal". Hayek wrote:

> "Here I may perhaps mention that only because men are in fact unequal can we treat them equally. If all men were completely equal in their gifts and inclinations, we should have to treat them differently in order to achieve any sort of social organization. Fortunately, they are not equal; and it is only owing to this that the differentiation of functions need not be determined by the arbitrary decision of some organizing will but that, after creating formal equality of the rules applying in the same manner to all, we can leave each individual to find his own level.
>
> There is all the difference in the world between treating people equally and attempting to make them equal. While the first is the condition of a free society, the second means, as De Tocqueville described it, 'a new form of servitude'" (Hayek, 1948, pp. 15-16).

A similar difference could be seen between a "guarantee of utility" and the mere right to increase one's own utility using one's own resources, a distinction that can be detected for instance in the U.S. Declaration of Independence which recognizes the right to the *Pursuit of* Happiness, not Happiness itself, as an unalienable human right. Treating people as equal implies, in the context of law and politics, to guarantee them equal (that is, identical) rights.

Another possibility would be to say that “the majority can do what it likes with the property of the minority”, that is, if a majority wants a certain good, it can make the minority pay for it even if the minority doesn’t want it. This theory, however, often lacks clear answers on two issues: the first is the one that I already mentioned of the definition of the electorate; the second is that it is incompatible with absolute and universal human rights.

It is not the purpose of this paper to debate the ideals of equal rights and democracy, nor to develop their consequences, justifications or inconsistencies. However, some variants of either of these two theories, or more often blends of both are often implicit in statements about public goods. Adopting the latter theory, for instance, would legitimize majority-approved state-provision of public goods, the financing of which would be imposed on majority and minority alike, whereas adopting the former theory would not.

Public Goods

The issue of public goods

The definition of public goods

Samuelson (1954) defines collective consumption goods as goods "which all enjoy in common in the sense that each individual's consumption of such a good leads to no subtraction from any other individual's consumption of that good" (Samuelson, 1954, p. 387); "A *public* consumption good, like an outdoor circus or national defense, which is provided for each person to enjoy or not, according to his tastes" (Samuelson, 1955, p. 350, italics original). This first criterion is now commonly referred to as "non-rivalry".

A similar condition is that the cost to produce the good is the same whatever the number of consumers of the good. The word "consumers" is here to be understood as "users" since these goods are actually services, so in fact "public goods" should be referred to more precisely as "collective services". It is in this sense that I use the term "public goods" throughout this paper.

Another way of stating the non-rivalry is through a marginal cost per additional user of zero for the producer (Wicksell, 1896, p. 99). Price discrimination might therefore be efficient if it permits fuller use of the service (Wicksell, 1896, p. 100), for instance for airplane seats or theatre seats, because the marginal cost is zero or low. However, in both cases, if the prices were different for exactly the same product or service, no one would willingly pay the higher price. The fact is that the conditions and timing of a purchase are part of the service paid: a plane ticket one month in advance is not the same product as a "last minute" plane ticket, a plane reservation obtained at a certain date is worth more than one that has to be purchased at another date. Besides, an additional user might lower the quality of the service for other users and thus the price they are willing to pay, thereby imposing an opportunity cost on the provider of the service. Further, marginal cost can be low for

a whole range of products hardly considered public goods such as cars, CDs, books, movies, medications, etc.

Another criterion is that of non-excludability, that is, the impossibility to limit the use of the service to those that actually pay for it. To summarize these conditions (Table adapted from Mankiw, 2000):

Is the good...		Rival?	
		Yes	No
Excludable?	Yes	Private Goods	Natural Monopolies
	No	Common Resources	Public Goods

I shall focus on “public goods”, however some arguments might also apply to the more limited case of natural monopolies. It is worth mentioning that even in most cases often considered as “natural monopolies”, private and competitive provision of the goods has in fact been both possible and “efficient” (DiLorenzo, 1996), and the theory of natural monopolies, implying monopoly prices for certain “public utilities”, is contested (Demsetz, 1968). Similarly, some of my points might also apply to common resources.

A first issue raised by Samuelson’s definition is: what is consumption? Does it make much sense to say that someone is *consuming* a service that doesn’t diminish by his use of it? Further, can someone be consuming a service if he doesn’t want to, or indeed if the “consumption” actually decreases his utility? Enke (1955) comments Samuelson’s definition:

> “Now a great many government-provided goods, perhaps most, do not fit this definition, if consumption means enjoyment. Examples are highways, public hospitals and libraries, police and fire protection, and defense against air attack; in each case, for a given public expenditure, I can have better service or more consumption enjoyment if other people will not exercise their rights to

> these benefits or compete with me for their favorable deployment" (Enke, 1955, p. 132).

"Consumption", in the strict sense of the word, would imply to diminish the physical quantity of a good, say bread. In this sense all goods are rival. But what about services? Obviously, if I use a highway, the highway will not diminish. But I am not paying to consume the highway, I am paying to use it as a means of transportation. When I pay for a movie seat, I am paying for the subjective enjoyment I derive from watching the film, not for the "consumption" of the seat place. Therefore, we shouldn't look at consumption, but more precisely at utility: a service is non-rival in that sense if several people can use it while the utility they derive from the use of the service (and thus perhaps the amount of money they are willing to pay to use it) is exactly the same as if they were using it alone.

Margolis is also critical of Samuelsons's definition:

> "Are there collective consumption goods? Are they the typical public services? In defense of Samuelson there are a host of theorists who have begun their arguments the same way. Against Samuelson are the facts. He claims that collective goods are not rationed — that the use of a good by A does not involve any costs to B. Clearly this is not the case in such common public services as education, hospitals, and highways, where capacity limitations and congestions are topics of the daily press. Would it be true of the more sovereign functions of justice and police? The crowded calendar of the courts certainly implies that the use of this function by A makes it less available to B. Similarly a complaint to the police ties up the officers in a maze of arguments, forms to be completed, and hearings to be attended, reducing their availability to others. Possibly the only goods which would seem to conform to Samuelson's definition are national defense and the aged lighthouse illustration. The lighthouse shines for all ships, when the lanes are not crowded; and everyone receives a full share of protection from the military machine" (Margolis, 1955, pp. 347-348).

Even for these two cases, however, the non-rivalry (as we shall see below) is not obvious. Goldin is even more critical of the existence of rival goods:

> "Except in special, essentially trivial cases, *all* goods and services are congestable, there is *always* rivalry among consumers, and the marginal cost of serving additional persons is *positive*" (Goldin, 1977, p. 57, emphasis original).

Public goods and the state

Even if there were goods satisfying these criteria, would it imply that the goods would *have* to be provided by the state? Samuelson suggests that the public goods criterion be a *necessary* condition for justifying government provision:

> "One might even venture the tentative suspicion that any function of government not possessing any trace of the defined public good (and no one of the related earlier described characteristics) ought to be carefully scrutinized to see whether it is truly a legitimate function of government" (Samuelson, 1955, p. 356).

But is it a *sufficient* one, or does it imply some ethical norm (Hoppe, 1989, p. 31)? Samuelson acknowledges some of the aspects of private preferences and normative elements that I have mentioned:

> "I assume no mystical collective mind that enjoys collective consumption goods; instead I assume each individual has a consistent set of *ordinal preferences* with respect to his consumption of all goods (collective as well as private)" (Samuelson, 1954, p. 387, italics original).

> "If we wish to make normative judgments concerning the relative ethical desirability of different configurations involving some individuals being on a higher level of indifference and some on a lower, we must be presented with a set of ordinal interpersonal norms or with a *social welfare function*

representing a consistent set of ethical preferences among all the possible states of the system" (Samuelson, 1954, p. 387, italics original).

"What is the best or ideal state of the world for such a simple system? [...] To answer this ethical, normative question we must be given a set of norms in the form of a *social welfare function* that renders interpersonal judgments" (Samuelson, 1955, p. 351, italics original).

"Of course we cannot compare two different Pareto points until we are given a social welfare function. For a move from one Pareto point to another must always hurt one man while it is helping another, and an interpersonal way of comparing these changes must be supplied" (Samuelson, 1955, p. 352).

The personal and variable nature of enjoyments or needs is also understood by Montemartini:

"We, however, demonstrate that there are no public, or collective, needs in the strict sense of the word, as opposed to private needs. It is always real individuals who calculate the advantages of imposing on the community the production of certain specific goods" (Montemartini, 1900, p. 151).

"We see that historically the so-called public or collective needs vary: no collective need can be said to be of a universal character in space and time. Thus the test of history also confirms us in the opinion that it is fallacious to consider that satisfaction obtained collectively necessarily derive from the special nature of needs which are termed collective" (Montemartini, 1900, p. 151).

And Margolis notes that "often there is no technical reason why these goods could not be distributed on a private basis. They serve private ends and are divisible." (Margolis, 1955, p. 348).

If the market is unable, because of non-excludability, to provide a good that some people would like and would be ready to pay for, does that mean that the state has to

provide it? Actually, the fact that the state takes care of providing the good doesn't mean that the situation will be any more "optimal". There is no magical way to correct the problem. If a good can be either provided for all or not at all, and if half the people want it and the other don't, is it better for it to be produced, or not produced? Does the state address the free rider problem, or does it create another one, since non-tax-payers will end up using the public good for free? Besides, even if the market can't provide a good or service, how could we show that the optimal quantity to be produced is not zero but one, ten, or 5.54? Even if a good "should" be produced, in what quantity, and in which quality "should" it be produced? (Goldin, 1977, p. 58, Fielding, 1979, p. 295).

Even supposing that the state could in theory produce the optimal quantity of a good, supposing that all the required information were somehow available to the state (and in reality the gathering of information *is* a major issue, see Hayek, 1948, pp. 90-91), there would still be no reason to suppose that the ruling politicians (or a political majority) would actually choose the "optimal" quality, price and quantity.

Comparisons of state provision of certain goods and market provision usually compare a utopian theoretical state with the reality of the market instead of comparing what is comparable (Minasian, 1964, pp. 78-79, Davis and Whinston, 1967, pp. 367-368, Demsetz, 1969). If we look at the actual state provision of public goods, shortages, congestions, wastes and other similar inefficiencies appear more common than with goods provided by the market, so the "optimum" quantity and prices seem hardly achieved by the state in practice (Rothbard, 1961). Institutional arrangements, such as the state providing a certain good for "free", obviously cause problems because of the lack of the usual price mechanism adjusting supply and demand (Davis and Whinston, 1967, pp. 361-362). In an utterly planned economy with all goods provided by the state, such problems are logically even worse (Mises, 1920).

The fact that the state provides a certain good can also mean the establishment of a privileged group, therefore stopping innovation and change even once there is no longer the "need" for the good to be provided by the state. The state monopoly stops attempts to compete, and therefore, even if a market solution can be found later on,

the state intervention might actually prevent it from emerging. This could lead to a circular reasoning of the state intervention being grounded in the market's incapacity to provide the good, an incapacity that might well be caused by the state's monopoly.

What is a good?

It seems difficult to discuss about whether a good is public or not whether first knowing whether it is a good at all (Hoppe, 1989, p. 29). A good is something that somebody values, wants, and is willing to pay for. The definition of a good is thus personal (Campan, 1999). An individual values a good because it helps him further his own projects, which might not be universal. A thing has value only from the moment someone values it: a thing is a good if and only if someone considers it a good (Hoppe, 1989, p. 30). Since value is a human concept, there isn't much sense in speaking about "intrinsic value" of things, for nothing could have any value if there were no human being to value it (Reisman, 1990, pp. 80-83). A "value", therefore, is always a *value for* somebody. And quite often, "one man's circus is another man's poison" (Samuelson, 1955, p. 351, fn. 1).

The consumer of an apple pays for the apple because he expects his utility to increase by using (eating, storing, playing with, etc.) the apple, he doesn't pay for the apple *per se*. He pays for the apple because it has characteristics that interest him. If he learns that the apple is poisoned, he will refuse to pay for it if his intention was to eat it, even though the apple might look the same. He might be willing to pay more for an apple produced domestically, or a branded apple, even if it's chemical properties are exactly the same as these of a "foreign" or anonymous apple.

Therefore, the consumer's utility from using a good is also subjective, and so is the question of what is a good or a service and what isn't: a thing that is a good for some people might be a "bad" for other people:

> "What of those individuals who dislike the collective goods, pacifists who are morally outraged at defensive violence, environmentalists who worry over a dam destroying snail darters, etc.? In short, what of those persons who find other people's good their 'bad?' (Rothbard, 1981, p. 543).

Similarly, anything can constitute a “good” or a positive externality for some people: the enjoyment of watching a neighbor’s private well-kept garden (Rothbard, 1962, p. 1037) could be seen as a “non-rival public good”, and so could the relief of seeing a neighbor eating such a private good as bread instead of starving.

Who is the public?

As we have seen, there is no absolute definition of an electorate, so the question of who is to choose and finance public goods is not trivial, nor is that of defining to whom the non-excludability and non-rivalry apply to. The problem might appear simple for the case of an utterly isolated village perhaps, but not for all other cases: a dam, a bridge, etc. might be approved by group A, financed by group B, and used by group C, with the three groups partly overlapping. Members of another city or foreigners might or might not enjoy the “public” goods of a particular city. In short, there are always some people that can be and are excluded from any public good, whereas the members of some particular, geographically limited group might not be excluded.

Who pays?

> “The collectivization of the satisfaction of some needs always aims at a participation in the costs by economic units which would not voluntarily have so participated” (Montemartini, 1900, p. 150).

If a good is provided by the state and its costs covered through taxation, then a series of problems arises. The most obvious is that it implies the fact that some will be forced to pay for a good they don’t want. Thus, a reasoning in terms of “efficiency” that would want to assess all costs would have to take into account the costs of coercion, which appears difficult if not impossible (Block and DiLorenzo, 2001, p. 46).

For the production of a good to be “efficient”, it should at least (ignoring the problems of individuality of preferences mentioned above) provide greater benefit for the taxpayers who are to pay for it than, first, other possible state expenses, and second,

private expenses that would have been done with the money had it not been taxed. As Mises points out:

> "Who is, in the case of public enterprise, to decide whether a service is useful? And much more important: How do we find out whether the services rendered are not too heavily paid for, i.e., whether the factors of production absorbed by their performance are not withdrawn from other lines of utilization in which they could render more valuable services?" (Mises, 1944, p. 63).

One possibility to solve the costs issue is that of Lindahl (1919): he suggests a pricing for public goods based on a negotiation process leading to "each individual having to pay a tax amount corresponding to his valuation of public services" (Lindahl, 1919, p. 173). This option, however, raises the question of determining the costs for the state of each individual's use of the services (Wicksell, 1896, p. 74 fn. a), and doesn't solve the problem if demand functions are unknown. Obviously, the scenario is somewhat unrealistic, assuming that "everyone agrees on the nature of the public services to be produced, leaving only the question of their extent and of the distribution of the cost. In reality there is no such agreement" (Lindahl, 1919, p. 173). So in reality, the decision relies on the distribution of political power (Lindahl, 1919, pp. 174-175).

Lindahl also suggests that the tax used to finance a public good should be approved at the same time as the public good in question (Lindahl, 1919, p. 169, fn. 1), a principle also approved by Wicksell (1896, p. 91). Approving the benefits and the costs at the same time permits to compare the two and thus make a rational decision. A cost-benefit analysis, however, suffers from two major issues: 1) The questions of benefits *for whom*, and costs *on whom* have to be answered. If the costs and the benefits are not borne by the same individuals, obvious problems arise. 2) If the costs are to be covered by taxes, the *full* cost of levying taxes has to be taken into account, including possible disincentive effects of higher taxes (Holcombe, 1997, p. 6) and *full* costs of enforcement of tax laws.

If these costs are not clearly visible, for example if the public services are more visible than the taxes paid to finance them and the alternative services that could

have been bought with the money had the taxes not been raised, then there can be a "fiscal illusion" and the state provision appear more attractive than it actually is (Lindahl, 1919, p. 175, Buchanan, 1967, ch. 10).

The choice of public goods

Unanimity

How to choose which public goods the state should produce? Unless a "social welfare function" or a valid method for making interpersonal comparisons of utility or aggregating preferences is provided *and* their use is justified for normative statements, some form of unanimity appears as the least contestable method of social choice. Thus, writes Wicksell:

> "If any public expenditure is to be approved, whether it be a newly proposed or an existing one, it must generally be assumed that this expenditure as such, neglecting for the moment the means of covering the costs, is intended for an activity useful to the whole of society and so recognized by all classes without exception. If this were not so, if a greater or lesser part of the community were indifferent or even opposed to the proposed public activity, then I, for one, fail to see how the latter can be considered as satisfying a collective need in the proper sense of the word. If such an activity is to be undertaken at all, it should for the time being be left to private initiative. It would seem to be a blatant injustice if someone should be forced to contribute toward the costs of some activity which does not further his interest or may even be diametrically opposed to them" (Wicksell, 1896, p. 89).

> "Provided the expenditure in question holds out any prospect at all of creating utility exceeding costs, it will always be theoretically possible, and approximately so in practice, to find a distribution of costs such that all parties regard the expenditure as beneficial and may therefore approve it unanimously. Should this prove altogether impossible, I would consider such failure as an a posteriori, and the sole possible, proof that the state activity under consideration would not provide the community with utility

corresponding to the necessary sacrifice and should hence be rejected on rational grounds" (Wicksell, 1896, pp. 89-90).

Lindahl's model, implying "free agreement" (Lindahl, 1919, p. 168) or negotiation between two parties (Lindahl, 1928, pp. 222-224) is in fact also a form of unanimity. His model implies two homogenous groups and so in fact describes more precisely the debate of two persons discussing what to do together and who shall pay how much for it, on a purely voluntary and unanimous basis, than decisions taken by majority vote for large heterogeneous groups of people.

Choice by residence

Tiebout (1956) proposes a model that doesn't apply only to public goods but for all packages of services, laws and taxes of any given jurisdiction. If there is an infinite number of jurisdictions, then each citizen will choose to live in the one that exactly corresponds to his preferences. But if the number of jurisdictions is limited, and the number of variables used to assess the difference between different jurisdictions is important, then the mere choice of residence isn't enough to guarantee any form of unanimity. The choice obviously helps to make the supply of public goods closer to their demand, but the adjustment is rather weak (Tullock, 1971, pp. 917-918).

Unanimously approved rules

Instead of unanimity decisions on all matters, a set of rules such as "public goods will be chosen by the majority" can be defined through a constitution, a constitution that would be unanimously approved. Such a possibility is mentioned by Arrow (1951, p. 90) and developed in detail by Buchanan and Tullock (1962).

In practice

Wicksell (Wicksell, 1896, p. 92) quite softens his unanimity principle in practice, down to a mere qualified majority of the parliament. Similarly, Buchanan and Tullock (1962) often refer to a "conceptual" agreement, instead of a real, unanimous, explicit agreement. A real agreement can hardly be "conceptual", one can either agree to

something or not. And if there were a “constitutional contract”, then all the people to be bound by the constitution would have to sign it. Therefore, a “constitutional contract” can, at most, bind the people who actually accepted the constitution.

In practice, the choice of public goods is therefore more often merely a question of majority vote, without unanimity neither at the decision stage nor at the constitutional stage. In the best case, the choice can be directly that of the population (see below), or more often even less direct through elected politicians. This can obviously lead to other issues including the choice of politicians (Hayek, 1944, ch. 10) and undue advantages for organized groups (Olson, 1965). A final problem for the choice of public goods through the political process is that the choice itself can be considered a public good (Tullock, 1971).

Switzerland, with its regular direct democracy votes on public goods issues and a constitution directly approved by the population offers a good way to check how close to unanimity democratic decisions are, and how much sense it makes to use such expressions as “everybody wants” or “the people want” or “society wants” when referring to them. Of course, with representative democracy such decisions will be even further from the direct preferences of the population.

I present the data by showing how many people out of the total resident population voted for a certain proposition, how many voted against it, how many could vote but didn’t, and how many couldn’t vote at all (too young to vote and foreigners and women before men approved woman suffrage in 1971). (Data sources: calculations based on vote results from the Federal Chancellery and population statistics from the Swiss Federal Statistical Office.) Four types of votes are presented: (1) some direct decisions related to the issue of national defense, (2) votes on voting rights, that is decisions changing the rules about *who* decides, (3) major revisions of the constitution (in relation to the idea of an unanimously approved constitution) and (4) votes on public utilities.

The definition of the electorate is far from unimportant: the liberalization of the electricity market, for instance, would have been approved instead of rejected if men’s votes only were taken into account (Longchamp et al., 2006).

We can see that the results are not only far from “unanimity”, but also far from “virtual unanimity” and even “majority of the people”: to consider that the decisions represent a “majority of the people” or “the people” implies a *political* stance accepting the democratic system in its current (and historical) form. In some cases below, as much as 73% of the population couldn’t even vote, and the term “majority” often refers to less than 10% of the population.

Title	Date	Description	Yes	No	Didn't Vote	Couldn't Vote
National Defense						
Initiative populaire “pour une politique de sécurité crédible et une Suisse sans armée”	2001-12-02	Abolition of all national defense in Switzerland, including a ban on private military forces.	5.30%	18.92%	40.73%	35.05%
Initiative populaire “pour une Suisse sans armée et pour une politique globale de paix”	1989-11-26	Abolition of all national defense in Switzerland, including a ban on private military forces.	15.77%	28.54%	20.44%	35.25%
Initiative populaire pour l'interdiction des armes atomiques	1962-04-01	Ban on nuclear defense.	5.09%	9.53%	12.16%	73.22%
Voting Rights						
Arrêté fédéral abaissant à 18 ans l'âge requis pour l'exercice du droit de vote et d'éligibilité	1991-03-03	Proposal for lowering suffrage requirement from 20 to 18 years.	14.34%	5.37%	43.85%	36.43%
Arrêté fédéral abaissant l'âge requis pour l'exercice du droit de vote et d'éligibilité	1979-02-18	Proposal for lowering suffrage requirement from 20 to 18 years.	14.82%	15.30%	31.23%	38.64%
Arrêté fédéral sur l'institution du suffrage féminin en matière fédérale	1971-02-07	Woman suffrage proposal. (Vote by men only.)	9.96%	5.20%	11.39%	73.46%
Arrêté fédéral sur l'institution du suffrage féminin en matière fédérale	1959–02-01	Woman suffrage proposal. (Vote by men only.)	6.11%	12.37%	9.48%	72.04%
Major Revisions of the Constitution						
Arrêté fédéral relatif à une mise à jour de la Constitution fédérale	1999-04-18	Current constitution.	13.53%	9.34%	41.94%	35.19%
Révision totale	1874-04-19	Full revision of the constitution.	12.45%	7.24%	80.31% (No data for number of voters.)	
Révision totale	1872-05-12	Full revision of the constitution.	9.46%	9.65%	80.89% (No data for number of voters.)	
Révision totale	1848-06-06	First federal constitution.	(No complete data, see comment below.)			
Public Utilities						
Loi sur le marché de l'électricité (LME)	2002-09-22	A proposal for liberalization of the electricity market	13.30%	14.74%	36.82%	35.14%
Initiative populaire “Services postaux pour tous”	2004-09-26	A proposal opposing liberalization of postal services.	16.83%	16.98%	31.13%	35.07%

For the first acceptance of the federal constitution, the Federal Chancellery provides some data, but adds this remark, moving the vote even further away from unanimity of the people:

> “La date exacte de la votation n'est pas connue. La procédure n'était pas uniforme. Selon l'ordre juridique actuel (cf. art. 123, al. 3, cst.), seuls 14 cantons et 2 demi-cantons votèrent. A Fribourg, c'est le Grand Conseil qui décida, aux Grisons les voix comiciales alors que dans les cantons et demi-cantons de'Uri, Unterwald-le-Haut, Unterwald-le-Bas, Glaris, Appenzell Rh. Extérieures et Rh. Intérieures, la décision fut prise par la Lansgemeinde (cf. FF 1879 I 419s.). Le nombre de suffrages valables et celui des "oui" et des "non" se réfèrent uniquement aux 14 cantons et 2 demi-cantons.” (http://www.admin.ch/ch/f/pore/va/18480606/det1.html)

The list of public goods

Fireworks

In a popular textbook, Mankiw (2000) offers a simple example of a public good, an example that illustrates some of the problems with the usual presentation of public goods:

> "The citizens of Smalltown, U.S.A., like seeing fireworks on the Fourth of July. Each of the town's 500 residents places a $10 value on the experience. The cost of putting on a fireworks display is $1,000. Because the $5,000 of benefits exceed the $1,000 of costs, it is efficient for Smalltown residents to see fireworks on the Fourth of July" (Mankiw, 2000, p. 228).

The conclusion of this example is that it is *efficient* to produce the fireworks display. However, can this be demonstrated? The fact that the citizens *like* to see fireworks is difficult to know without observing the *actions* of the citizens. Merely asking them how much they'd be ready to pay for it obviously won't do. Efficient can only mean the best use of means in achieving a certain set of ends. If there is disagreement on what the ends are, it doesn't make much sense to speak of efficiency (Rothbard, 1979, pp. 266-268): it's not "efficient" to have fireworks for those citizens who dislike fireworks; the example relies on a unanimous agreement about the desirability and value of fireworks.

Further, preferences can change over time, so the relevant question is not whether the citizens *have enjoyed* fireworks in the past, but where, at this moment in time they rank them in their ordinal preferences. Thus, the "placing of a $10 value" suffers from the same problem: unless they effectively do pay the $10, there is no way of proving that this is indeed the amount they are willing to pay. Further, even if everyone values it at $10, the example still implies that everyone will pay $2 (or at least less than $10) in taxes for the fireworks. But taxes are seldom uniformly distributed. A more realistic case is one in which some value fireworks at $10, some

at $0, some at $-10, etc., and some will be taxed $0, some $2, some $50, etc. for their provision.

The alleged solution to the problem is for the government to raise taxes and use the money to pay for the fireworks: “The government, however, can potentially remedy the problem. If the government decides that the total benefits exceed the costs, it can provide the public good and pay for it with tax revenue, making everyone better off” (Mankiw, 2000, p. 228).

The problem is, it won’t “make everyone better off” in a more realistic scenario: it might make a *majority* better off, but it would be enough for *one* citizen to hate fireworks, or be sick and unable to watch them and thus enjoy them, for one person being worse off, for the result in terms of welfare to be ambiguous. To be able to say that to make the majority better off and a minority worse off has led to an increase in “social utility” or “total welfare”, we would need to be able to have a cardinal and objective measure of individual utilities, which we don’t. When Mankiw writes “the government decides that the total benefits exceed the costs”, “to decide” is indeed the appropriate verb: the government cannot *prove* or *discover* what the total benefits are. It cannot prove that the result is “efficient”. Thus, it can only *decide* what to do. This decision will usually be constrained by public *choice* theory, not public *goods* theory.

Airplane spraying to control mosquitoes

Another common example is that of airplane spraying to control mosquitoes. The example seems however less used in recent years, since questions have been asked about the potential danger for human health of such spraying. If such a spraying is indeed potentially dangerous, then obviously it is not a good but a bad, if not for everyone than at least for those individuals that consider that the risks are not worth the benefits. Further, the good is actually both rival and excludable (Goldin, 1977, p. 54).

Lighthouses

> "Lighthouses are a favorite textbook example of public goods, because most economists cannot imagine a method of exclusion. (All this proves is that economists are less imaginative than lighthouse keepers.)" (Goldin, 1977, p. 62).

Lighthouses have in fact largely been provided privately (Coase, 1974) through history. Further, lighthouses are not used or enjoyed by “everyone”. They are used by some people, generally some of the residents, and some foreigners. If lighthouses are financed by the state, then all taxpayers have to finance them, even those who see no need for lighthouses, and even those that would, for instance, like some lighthouse to be built elsewhere.

Transport lanes

Roads, highways and bridges are obviously excludable. Their rivalry, however, is usually contested. A distinction is often made between “congested” and “uncongested” roads or highways. However, there is no reason to make such a binary distinction. In fact, the risk of accident and the time it takes to travel increase with the number of users (Goldin, 1977, p. 59). The very point of transportation is to get from one point to the other as fast as possible, and with a minimum of risk. Car purchasers seldom ask for slow cars with low security. Any user would usually prefer to be alone on the road than on a congested road, and would rather share the road with 5 cars than with 6. This implies that the user is willing to pay a higher price to use the road the less other users there are (at extremes, if the road is fully congested, he is willing to pay zero, and the price for the exclusive use of the road would be very high). This means that the provision of the use of roads is a normal, rival and excludable private good, and also that if the roads were private and priced, the situation would be more optimal since the problem of congested roads would probably disappear.

Limited space goods

Goods or services such as theatres, movie theatres, airplanes, cars, trains, classrooms or even living rooms all are obviously excludable. However, their rivalry is sometimes contested. However, the utility of going to a theatre is subjective. It might be more agreeable to be alone than in a crowded theatre. In the other examples, the less consumers the better for each: in all these cases, more people can mean more noise and less space for each person. In the case of airplane seats, more people can mean less attention from flight attendants and of course occupying several other (unsold) seats is more agreeable than being restricted to the one purchased. These can seem as petty details, but the existence of first-class seats illustrates their importance for consumers.

The marginal cost for the producer might be low (though seldom really zero). But should really an “efficient” price be set at marginal cost? If a movie theatre has some unoccupied seats, or even if a private living room is not used to full capacity, does it imply “inefficiency” and justify nationalization of movie theatres and living rooms? (Reisman, 1990, pp. 430- 432). If such goods were priced at zero, then crowding would occur and the situation would not be any more optimal.

Television, radio, lectures, concerts

Several people might enjoy listening to a public speaker, and as long as they keep silent, the possibility to enjoy the speech is not reduced. If they want to ask questions, however, there will be crowding. Of course, they can enjoy the speech only up to a limited distance: the number of people that can be close enough to listen is limited, but the speaker can extend that number up to a certain point if he speaks louder or uses sound amplifiers. A music performer playing in the street might not exclude passersby from enjoying his music, but he can still choose on which street to play, or even play in a closed room and then exclude whom he wants.

Similarly, radio and television are not necessarily provided to the whole of the earth. However, the case can still be made that for the same program, anyone close enough can watch it, while no one’s enjoyment is reduced. But again, we have to

remember the definition of a good and its individual nature: a program in French might be a good for French-speaking people, but people speaking only Spanish might not find any enjoyment at all watching it. Therefore, to really provide a *good* to a larger number of people, something they *want* must be provided. Since more people have more varied tastes, it follows that to serve a larger number of people requires more varied programming or more channels (Goldin, 1977, pp. 64-65). The mere ability to receive a program has to be distinguished from an actual willingness to pay for it, for as Minasian aptly notes, “at the extreme, the program might be a constant beep-beep signal” (Minasian, 1964, p. 73). “Once a television program is on the air, everybody in the area could tune in on that program without ‘appreciably’ increasing the costs. Granting consumer choice, the important question is not whether others could, but rather whether they would prefer to consume that good if they had alternatives open to them” (Minasian, 1964, p. 78).

Further, for public lectures, if a speaker gives a lecture in the street or in the forest shouting loudly, some people might want to listen while others don’t: the speaker can’t complain if he speaks and then asks them to pay and they refuse. If he wants to get paid, the solution is to make payment through another way, such as giving the lecture in a private place and charging entry. The same holds true for television: if one emits radio or TV signals, he can’t complain afterwards about people who don’t pay (whether they actually want to consume the good at the price he’s asking or not). The solution is simply for an entrepreneur to find alternative, more excludable ways of financing the good, such as advertisement or encryption.

Security

National defense cannot be a *public* good if it is not even a *good* for some people. There is no unanimity concerning national defense: many people might feel they don’t need that much national defense, or that they don’t need the kind of national defense that is being provided, or might feel that the kind of national defense that is provided costs too much. If the national defense implies conscription, then obviously there is the cost of suffering coercion for the unwilling soldiers. If a person dies during military training or even fighting, then obviously (unless he voluntarily risked or sacrificed his life for some value he deemed higher) the cost for him far outweighs

the benefits. The relevant question is not whether to have police protection and national defense, but *how much* of it to produce: zero, an amount x, or spend the whole GDP on weapons: “The question that must be answered by any defense agency is not whether or not to supply defense, but how much defense to supply to whom?” (Rothbard, 1981, p. 534).

Many people such as pacifists might be against national defense on principle, or might consider it useless under certain circumstances, or might even consider that the country they live in would be better off if conquered by another state, if possible with as little fighting and deaths as possible, and thus the weaker the army the better.

The protection offered by national defense might extend only over a certain geographical area. Citizens staying abroad might or might not enjoy military protection in the case they need it (Goldin, 1977, p. 60). The vicinity of a military installation might be seen as a (rival) good, offering increased protection, or as a bad, increasing risk of close attack (Minasian, 1964, p. 79). In the case of a war, the army might have to decide between sending more troops to one city or the other. It might decide to abandon certain regions of the country it is supposed to protect, or even surrender altogether. Historically, this does happen, and the citizens then end up having financed weapons that are then in the hands of the very enemy the state was supposed to protect them from. Even the staunchest militarist and patriot can hardly deny that in such a case, in the end, he will have been forced to suffer a lot of costs (military expenditures financed through taxes, conscription, etc.) to finance not a public good, but a public bad.

The provision of national defense, and more generally security, is rival and excludable (Block, 2003, pp. 322-323, Goldin, 1977, pp. 60-62): if all the police are busy in another neighborhood, I cannot enjoy the same level of protection I would if they were watching my neighborhood. Adjudication, similarly, is rival (Goldin, 1977, p. 65). Serving more persons requires additional judges, courts, etc. or more waiting-time and thus additional costs. Further, there can be (and often is in practice) a basic service of security and dispute settlement provided by the state and then supplementary private services (Wicksell, 1896, p. 90). The demand for these goods is far from collective; it varies a lot with individuals.

Incidentally, it is worth noting that one major cost of current national defense in countries such as Switzerland is the cost of enduring conscription. The cost can be supposed to be high, since if it were not, citizens could simply be asked to choose between paying an amount of money and being conscripted, and most would choose being conscripted. This cost, however, is borne only by male citizens, and not even all of them (most are now discharged of their "duty"). Women, foreign residents, and unconscripted men, are therefore in a large part "free riders" in such a system (but of course, this is only valid for those who consider national defense as a good, and approve the current system).

Anti-rival goods

Computer software, music and more generally *data* can be considered non-rival and non-excludable if copy costs are zero and such copying is costly to stop (Holcombe, 1997, p. 7-8). The example of software is quite interesting:

> "This example is all the more interesting in the middle 1990s because, while microcomputer software is a public good, the computers that run the software are private goods, and in recent years the companies selling the public good on the market have been much more profitable than those selling private goods to the same markets" (Holcombe, 1997, p. 7).

> "Could anyone think that software would be cheaper or more productive if it were produced by the government rather than by private firms?" (Holcombe, 1997, p. 8).

However, it could be considered that such goods are not only non-rival, but even *anti-rival*: the utility from using them is often *higher* if there are more users. This is the most true for operating systems: there isn't much point in being the only one to use a particular operating system, since then the user will suffer incompatibility with other operating systems, have a hard time obtaining support for it, and not many programs will be developed for it. The same holds true for any activities for which "the more the merrier" is true, such as games, parties, etc. However, for some games (and this

might be true as well for, say, a swimming pool), there might simply be an *optimal number of users*, at which the utility of each user is highest. If there is a fee to enter the swimming pool, this optimum might not be the same as that of the owner seeking to maximize his revenue, but this could hardly be considered enough to justify state provision of swimming pools. Obviously, in such a case the preferences are also very individual: some might prefer to be alone, and the optimal number of users might be valid only for persons that like each other.

As we can see from this example, if even *anti-rival* goods can be produced privately, the case for maintaining the inefficiency of the market at producing *non-rival* goods (supposing they can really be identified) appears all the weaker.

Conclusion

The individuality of preferences implies that a collective preference is impossible to construct outside of unanimity without resorting to some normative political theory (or theory of rights). The conclusions to be drawn from public goods theory, however, are unsettled without the availability of such a collective preference.

Fundamentally, the very definition of rivalry, and thus of public goods, is ambiguous because of the individual nature of preferences. Strictly speaking, there are no public goods if there is no unanimous agreement on what a “good” is. Unless there is unanimous agreement on what is a desired good and how much of it to produce (or unanimous agreement on a decision-making procedure to make the choice), the choice of public goods relies on political majorities, and might vary with regions or time periods. The choice therefore depends more on *political* than on *economic* reasons.

If all interests, all preferences and all choices are private, not public, then there is no such thing as “the common good”, or “general interest”, or “national interests”, or “the will of the people”. There are only *private interests*, *personal utilities* and *individual preferences*. If a good is a good only for the persons that consider it as such, then there cannot strictly speaking be any “public goods” in a general, uncontestable sense.

There is therefore no way of proving that a good *has to be* provided by the state in a certain quantity, or produced at all, without making some normative assumptions, assumptions which would have to be justified as well.

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