

# A Theory of the Theory of Public Goods

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**A** public good, as defined by economic theory, is a good that, once produced, can be consumed by an additional consumer at no additional cost. A second characteristic is sometimes added, specifying that consumers cannot be excluded from consuming the public good once it is produced. Goods with these characteristics will be underproduced in the private sector, or may not be produced at all, following the conventional wisdom, so economic efficiency requires that the government force people to contribute to the production of public goods, and then allow all citizens to consume them. Simple observation of the real world suggests two problems with the application of public goods theory as a justification for government production. First, many public goods are successfully produced in the private sector, so government production is not necessary. Second, many of the goods government actually does produce do not correspond to the economist's definition of public goods, so the theory does a poor job of explaining the government's actual role in the economy. If public goods theory fails as a theory of public expenditure, why is it so firmly entrenched in the economic theory of the public sector? This paper develops a theory to explain the development and use of public goods theory as a justification for government production.

The paper begins by examining the theory of public goods. Public goods certainly exist, in the sense that there are goods that fit the economist's definition of public goods, but production in the public sector is neither necessary nor sufficient for the efficient production of public goods. A model that explains government involvement in the economy is then presented. Within this model, the production of national defense is explained as an institution that enables the government to protect and enhance its own wealth. Following this reasoning, national defense is produced by government because it furthers the private interests of those who run the government, not because it is in the public interest for the government to produce public goods. The model in this paper has more

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of an economic foundation than the theory of public goods, because it explains the production of national defense as the result of the rational self-interested decisions of individuals, rather than as a product of a benevolent government that acts in the public interest.

The model is then extended to show that public education serves a similar function by lowering the cost to the government of getting its citizens to further the government's interests. Public education gives the government more control over the educational system, and, more to the point, public education makes educators government employees, so educators have the incentive to further the government's interests. Public education furthers the government's interests by socializing students to make them better (more compliant) citizens, and by teaching a curriculum that portrays the government as an institution that furthers the public interest. Public goods theory is a part of this curriculum.

The first step in developing a theory of the theory of public goods is to examine the idea that goods with public-goods characteristics require government production for efficiency. Public goods theory can then be shown to be wanting as a positive theory of public-sector production. If public goods theory does not explain the activities of the public sector, why was it developed, and why does it remain a core concept in the teaching of public finance? This paper shows how it is in the best interest of those who run the government to promote public goods theory, and shows how educators have been given the incentive to develop and to teach public goods theory.

### **Public Goods**

Economists define a public good as a good having one or both of the characteristics of nonexcludability and jointness in consumption. Nonexcludability means that it is difficult to keep people from consuming the good once it has been produced, and jointness in consumption means that once it is produced for one person, additional consumers can consume at no additional cost. Goods that are joint in consumption are also called collective-consumption goods or non-rival consumption goods, and the terms are used interchangeably here.

The most precise technical definition of a public good, and the definition that is most often referred to by economists, is Samuelson's definition, which says that a public good is a good that, once produced for some consumers, can be consumed by additional consumers at no additional cost. This is the jointness in consumption referred to above.<sup>1</sup> While this is the standard economist's

<sup>1</sup>Paul A. Samuelson, "The Pure Theory of Public Expenditure," *Review of Economics and Statistics* 36 (November 1954): 387–89; and idem, "A Diagrammatic Exposition of a Theory of Public Expenditure," *Review of Economics and Statistics* 37 (November 1955): 350–56.

definition of a public good, economists have taken some liberty with the language in formulating the definition.<sup>2</sup> While economists give it a formal technical definition, in verbal analysis “public good” is often used in an ambiguous manner.

A dictionary defines public as “of, related to, or serving the community.” For most people who hear it, including economists, the term conjures the image of a good available for all citizens to consume, and common examples used by economists, such as national defense and highways, are suggestive of the idea that a public good is a good produced by government, and generally available for the benefit of its citizens. Indeed, this more commonsense definition of public good was generally accepted by economists until Samuelson made the definition more precise, and at the same time altered its meaning.<sup>3</sup> Thus, on the one hand, professional economists define the term public good as something with the technical characteristics of jointness in consumption and nonexcludability. When they use the term in a discussion of the public sector, however, it conveys the connotation of government production. Indeed, when Samuelson rigorously defined the term, he also gave reasons why public-sector production is necessary for efficiency, creating a close link between the dictionary definition of the term and Samuelson’s formal definition. The implication is that the technical definition is just a more rigorous variant of the dictionary definition.

The common name given to Samuelson’s rigorous definition suggests that public goods are government-produced goods, implying that goods with the characteristics of jointness in consumption and nonexcludability ought to be produced by government. Perhaps this bias in the name is obvious, but it is an integral part of the application of the theory of public goods. An economist argues that a good has the characteristics of either jointness in consumption or nonexcludability, and then, because that makes the good a public good, implies that the good should be produced in the public sector.

<sup>2</sup>Randall G. Holcombe, *Public Finance: Government Revenues and Expenditures in the United States Economy* (St. Paul, Minn.: West Publishers, 1996), esp. chap. 5. This is an undergraduate public-finance textbook which discusses and explains the definition of public goods in detail, and raises some of the questions about public goods that are the subject of this paper.

<sup>3</sup>Richard A. Musgrave, *The Theory of Public Finance* (New York: McGraw-Hill, 1959), p. 44. In his classic public-finance treatise, Musgrave uses a somewhat tautological definition that fits the pre-Samuelson concept, defining public goods as “goods the inherent quality of which requires public production.” He gives education and the military as examples, and defends them in a commonsense way by noting that there are compelling reasons for having both produced in the public sector. Of course, one might disagree with his assessment, but the point here is that prior to Samuelson’s definition, public goods were thought of more generally (and less rigorously) as goods that are produced by government. See also the discussion by Dennis Epple and Richard E. Romano, “Public Provision of Private Goods,” *Journal of Political Economy* 104, no. 1 (February 1996): 57–84, on private goods produced by government, and how the mainstream economic literature has been won over to Samuelson’s definition, and away from Musgrave’s.

Is a public good a good that is produced in the public sector, or is it a collective consumption good, or a nonexcludable good, or all of the above? The nomenclature leads one to believe that there is good reason for goods with publicness characteristics to be produced in the public sector. Despite the deceptive use of language in the naming of public goods, the remainder of this paper will stick closely to the economist's definition of jointness in consumption and nonexcludability, and will examine critically the notion that public goods are more efficiently produced in the public sector.

### **Public Goods and Public Production**

The name public goods suggests public-sector production, and Samuelson argued the merits of public-sector production when he first formalized the theory of public goods.<sup>4</sup> Samuelson argued that there is no good revealed-preference mechanism for public goods, so they will not be produced efficiently, if at all, in the private sector. Public-sector production is thus required for efficiency. Note that even the titles of Samuelson's articles show the implication that public goods, as he defines them, must be produced in the public sector. The titles of both articles refer to a theory of public expenditure rather than a theory of public goods.

In his second article, Samuelson recognized that there could be other definitions of publicness, and other theories of public expenditure, but reinforced the idea that goods with the collective-consumption characteristic he described would have to be produced in the public sector for efficiency reasons.<sup>5</sup> Because the idea is so closely associated with Samuelson, this characteristic of jointness in consumption is often referred to as Samuelsonian publicness. In the face of Samuelsonian publicness, markets fail to allocate resources Pareto-efficiently, and Samuelson's ideas on market failure were combined with others pursuing parallel lines of reasoning in other areas to generate a substantial literature on market failure. Bator synthesizes this literature by showing that there are numerous ways in which markets fail to be efficient, which points toward a policy of government intervention to correct the market failures.<sup>6</sup> By the end of the 1950s, public goods theory, as developed by Samuelson, was an integral part of public-expenditure theory.

The fact that some goods exhibit Samuelsonian publicness is not a matter of dispute, but the idea that Samuelsonian public goods must be produced in the public sector to allocate resources efficiently does not logically follow from the

<sup>4</sup>Samuelson, "The Pure Theory of Public Expenditure"; and idem, "A Diagrammatic Exposition of a Theory of Public Expenditure."

<sup>5</sup>Ibid.

<sup>6</sup>Francis M. Bator, "The Anatomy of Market Failure," *Quarterly Journal of Economics* 72, no. 3 (August 1958): 351-79.

Samuelsonian publicness characteristic. One logical problem is that even if market production fails to reach the theoretical ideal of Pareto efficiency, there is no guarantee that government production will be any more efficient than private production. As Buchanan explains, if Pareto efficiency is used as the benchmark for success, then government can fail to allocate resources efficiently in the same way that markets can.<sup>7</sup> Thus, one would have to compare market versus government production by evaluating the real-world institutions in each case, rather than comparing the theoretical efficiency of Pareto optimality with the real-world performance of markets.

A second issue is the problem of revealed preference, which was well-recognized by Samuelson. If the market fails to get a true measure of revealed preference for public goods, can the government expect to do any better? Writers such as Tiebout, Clarke, and Tideman and Tullock have described how public-sector mechanisms could be designed to efficiently allocate public goods, helping support public goods theory as a foundation for government production.<sup>8</sup>

But revealed preferences exist in the private provision of Samuelsonian public goods as well. Minasian describes the advantages of revealed preferences for public goods by examining the market for television broadcasts.<sup>9</sup> If the broadcasts were financed by tax revenues, produced by the government, and distributed free of charge to viewers, then the government would have no way of telling which broadcasts were more valuable to its viewers. But if markets distributed the broadcasts, then producers could use market indicators if viewers paid for each viewing (as they do with motion pictures), or if advertisers paid and wanted their advertising to be shown with broadcasts that appealed to their consumers.<sup>10</sup>

If Samuelsonian public goods are sold on the market like movie tickets, then some inefficiency would result from the exclusion of individuals who valued the good, but by less than the market price. This inefficiency would have to be weighed against the efficiencies generated by the market's revealed-preference

<sup>7</sup>James M. Buchanan, "Public Finance and Public Choice," *National Tax Journal* 28, no. 4 (December 1975): 383–94.

<sup>8</sup>See Charles M. Tiebout, "A Pure Theory of Local Expenditures," *Journal of Political Economy* 64 (October 1956): 416–24; Edward H. Clarke, "Multipart Pricing of Public Goods," *Public Choice* 11 (Fall 1971): 17–33; and T. Nicolaus Tideman and Gordon Tullock, "A New and Superior Process for Making Social Choices," *Journal of Political Economy* 84 (December 1976): 1145–60.

<sup>9</sup>Jora R. Minasian, "Television Pricing and the Theory of Public Goods," *Journal of Law and Economics* 7 (October 1964): 71–80.

<sup>10</sup>Samuelson obviously does not agree with Minasian, but the issues involved in this debate are worth careful consideration, see Paul A. Samuelson, "Public Goods and Subscription TV: Correction of the Record," *Journal of Law and Economics* 7 (October 1964): 81–83.

mechanisms. The advantages are much broader than just indicating what type of motion picture is most valuable to viewers. Innovations in markets, whether regarding locations, product types, or potential new markets, are best seen by those who work in those markets, and who have the potential to profit from innovations. The advantages of market production in this context have been described by Hayek and Kirzner<sup>11</sup> among others, and at least establish that Samuelsonian publicness by itself does not create a presumption that public production is more efficient than private production.

Yet another obvious problem with producing public goods through tax-financed public-sector production is that the tax system imposes an excess burden on the economy. The excess burden of taxation includes those costs of the tax system over and above the revenues collected, such as the disincentives caused by taxes, and the administrative and compliance costs that the tax system produces. Thus, at the very least, any inefficiencies of private-sector production would have to be weighed against the inefficiencies produced from using the tax system to raise revenue; yet the excess burden resulting from public finance is rarely mentioned when the public-goods argument is used to justify public-sector production.

A second characteristic of publicness is nonexcludability. A good is nonexcludable if it is prohibitively costly to keep people from consuming the good after it has been produced. The problem with nonexcludable goods is that if consumers cannot be excluded from consuming them, they will free ride and consume without paying, again resulting in underproduction of the good. Note that Samuelsonian publicness and nonexcludability are two completely distinct characteristics. A good could be Samuelsonian public, yet excludable, or nonexcludable but Samuelsonian private. For example, cable television systems often have premium channels which are scrambled to exclude non-paying customers. The premium channels could be extended at no additional cost to all viewers who have cable, so are Samuelsonian public, but the costs of exclusion are low enough that the cable company can extend the premium channels only to those who pay.<sup>12</sup> Likewise, Samuelsonian private goods that are nonexcludable are sometimes referred to as common-pool goods.<sup>13</sup>

<sup>11</sup> See Friedrich A. Hayek, "The Use of Knowledge in Society," *American Economic Review* 35, no. 4 (September 1945): 519–30; and Israel M. Kirzner, *Competition and Entrepreneurship* (Chicago: University of Chicago Press, 1973).

<sup>12</sup> Exclusion costs are paid by most vendors, whether they are selling public or private goods. Locks on vending machines and security guards at retail stores are resources employed to exclude non-paying customers from consuming the goods.

<sup>13</sup> Private arrangements can also be made to allocate nonexcludable but Samuelsonian private goods. For a discussion see Elinor Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action* (New York: Cambridge University Press, 1990).

In practice, there is a tendency to confuse Samuelsonian public goods with nonexcludable goods, partly because typical examples of public goods share both characteristics. However, one characteristic does not imply the other, and each characteristic has its own separate argument regarding the inefficiency of private production. For Samuelsonian public goods, it is inefficient to exclude potential consumers who place any positive value on the good, whereas for nonexcludable goods, free riders result in a marginal value of the good to consumers that exceeds marginal cost. For Samuelsonian public goods, inefficiency occurs if people are excluded, whereas the inability to exclude people creates the inefficiency with nonexcludable goods. In both cases, underproduction results when compared to a theoretical ideal. However, as noted above, incentives in the market may be able to improve resource allocation when compared to government production, meaning that there can be no presumption that public production is more efficient than private production for public goods of either type.

### **Real-World Production of Public Goods**

In practice, the market produces many nonexcludable Samuelsonian public goods. Television and radio broadcast signals provide examples of goods that are both nonexcludable and Samuelsonian public. Broadcasts are not sold directly to the viewing public in most cases but are financed through advertising, and advertisers can be excluded. This shows how market arrangements can be devised in innovative ways to overcome publicness problems, but adherents of public goods theory are critical of this example of the private production of a public good because they argue that it is not the public good that is sold, but rather the excludable good. Still, the example is worth noting because it shows the way that markets can respond by designing real-world solutions to theoretical problems.

Another example of a public good produced in the private sector is microcomputer software. Once the program is written, additional users can copy the program, making it available to additional users at no cost to existing users, so microcomputer software is Samuelsonian public. Because it is so costly to prevent such copying, it is also nonexcludable. Yet Bill Gates became one of the richest men in the world in a period of about a decade, selling a public good. 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. Given the significant advances that have been made in software, few people would argue that software would be more efficiently produced by the government than by the private market. The private market has been very successful at producing this public good.

Consider microcomputer software within the context of the problems that supposedly arise in the production of public goods. Because of jointness in consumption, any positive price inefficiently excludes some consumers, but the fact that it is difficult to exclude users who copy the programs of others mitigates this problem, at least to a degree. Furthermore, the positive price also provides a market guide to the value of the program, pointing the market toward production that better satisfies consumer demands. This enhances efficiency. Because a public good is nonexcludable, public goods theorists argue that free riders will keep producers from profiting from the production of the public good. Yet, legal institutions arise to mitigate this problem and provide revenue to the producers, and the relative profitability of software manufacturers to hardware manufacturers shows that the free-rider problem has not materially hindered the industry.<sup>14</sup> When judging the efficiency of private production of public goods, it must be done relative to alternative real-world institutions, rather than relative to some abstract theoretical ideal such as Pareto optimality. The theoretical arguments show how market incentives lead toward the efficient production of public goods, and an examination of the software industry provides an example of how this works in the real world. Could anyone think that software would be cheaper or more productive if it were produced by the government rather than by private firms?

When considering the software example, doubters are quick to give reasons why software can be produced by private markets while other goods, like national defense must be produced by government. Any differences between software and national defense are irrelevant to the present discussion, however. The issue is not whether national defense, or any other specific good, can be produced by markets, but rather whether public goods, defined by economic theory as non-excludable collective consumption goods, can be efficiently supplied by markets. Examples such as software and radio broadcasts show that they can. Thus, if government production of national defense (or any other good) is necessary for efficiency, it is not because those goods are public goods. Using the economist's definition, public goods can be and are supplied efficiently by markets. Theoretical arguments show why this can be so, and examples demonstrate that it actually happens.

<sup>14</sup>An interesting subject of inquiry, but beyond the scope of the present paper, is the institutional and legal structure within which the market provides incentives for the production of public goods. Neoclassical public goods theory is designed in a static equilibrium setting that ignores the institutional structure of exchange and the process by which contracts are written to encourage parties to engage in mutually-beneficial production and exchange.

## **Public Goods and Market Production**

The preceding sections have covered a substantial amount of ground, with the intention of making a limited point. The point is that from the standpoint of economic theory and by looking at real-world evidence, there is no reason to presume that government production is necessary to efficiently produce nonexcludable Samuelsonian public goods. From a theoretical perspective, market production of public goods provides the benefits of revealed preference for demands and incentives to satisfy consumer demand at low cost. Innovation is likely to be greater for private rather than public production, following the arguments of Hayek and Kirzner.<sup>15</sup> Further, private-sector production avoids the cost of the excess burden of taxation. Finally, there are well-known incentive problems that stand in the way of efficiency for any type of government production. Real-world evidence shows that nonexcludable Samuelsonian public goods, like radio broadcasts and microcomputer software, are efficiently produced in the market. Indeed, in locations such as Britain and Cuba, where the government produces radio broadcasts, there is a black market for private radio broadcasts, indicating that private provision can thrive even when subsidized public provision is already taking place.

Note the limited scope of this argument. It does not say that there is no reason for the government to produce certain goods, such as national defense or roads or education. It merely says that if there is a reason, it cannot be that these goods are nonexcludable Samuelsonian public goods. Both theoretical and practical evidence shows that the market can efficiently produce some nonexcludable Samuelsonian public goods, so publicness by itself cannot be the reason for government production. Private markets can produce public goods, both in theory and in reality.

### **Is Government Production a Public Good?**

An examination of the expenditures of governments in the United States shows that the largest single category of government expenditure is redistribution. At the federal level, national defense is the second-largest category of government expenditure, while at the state and local level, education is the major expenditure category. Governments undertake an array of other expenditure programs, but because public goods theory has been put forward as a theory of public expenditure, it is reasonable to ask whether government output is a public good. In other words, can public goods theory be used to explain what the government actually does?

<sup>15</sup>Hayek, "The Use of Knowledge in Society"; and Kirzner, *Competition and Entrepreneurship*.

The best claim that one could make that redistribution is a public good is that it may provide a nonexcludable benefit to those who give. The argument goes as follows. People want to be charitable because they want to see an improvement in the well-being of those who are disadvantaged. However, if one person gives to charity, another can free ride off this donation by allowing the contributions of others to improve the situation of the disadvantaged. Both the giver and the free rider receive the same benefit in terms of seeing an improvement in the well-being of the recipient.<sup>16</sup> The donation itself is a private good to the recipient, because a dollar given to one recipient is a dollar less available to another, but it may be a public good among potential donors. Thus, in order to provide the optimal amount of redistribution, the government forces people to contribute.

Empirical verification of this argument might be difficult, because taxpayers arguing that they did not want to contribute as much as they are to redistribution might be lying in order to try to become free riders. However, one must pause to consider the amount of redistribution that takes place in the United States to those who are relatively well-off. The poor outside the United States are so much worse off than those inside the United States that one must wonder what kind of a utility function these altruistic donors have that makes them so charitable to those within the nation's borders but so unsympathetic to those in other parts of the world (and sometimes just across the border). Furthermore, the bulk of redistribution efforts in the United States goes toward those who are not among the lowest in income, and sometimes are among the wealthiest members of the population.<sup>17</sup>

If the argument that redistribution is a nonexcludable good is tenuous, it should be apparent that redistribution is not a Samuelsonian public good. In Samuelson's framework, it is a pure private good. A dollar's worth of resources redistributed to one person reduces the amount of resources available to others by a dollar, so consumption is completely rivalrous. Public goods theory cannot explain redistribution, the largest economic activity of the contemporary public sector.

One might argue that government coerces taxpayers to contribute to redistribution programs because redistribution is a public good, but an alternate hypothesis is that government redistribution goes to those who have political power. This would explain why redistribution would go toward people in this

<sup>16</sup>This argument is expressed by Harold M. Hochman and James D. Rogers, "Pareto Optimal Redistribution," *American Economic Review* 59 (September 1969): 542-57.

<sup>17</sup>The largest redistribution program in the United States is Social Security, which redistributes regardless of need. The same is true of farm price supports and other programs. For a discussion of the idea that most redistribution comes from middle income people and goes to middle income people, see George J. Stigler, "Director's Law of Public Income Redistribution," *Journal of Law and Economics* 13, no. 1 (April 1970): 1-10.

country when others outside the country, who are much worse off, get none, and would explain why much redistribution goes toward those who are not financially disadvantaged. Conventional wisdom, for example, suggests that politicians are reluctant to tamper with Social Security benefits because of the political power of elderly Americans. This conventional wisdom lines up with the political-power theory of redistribution, not the public goods theory.

The two other major products of government, national defense and education, are susceptible to the same types of questions. Most people unthinkingly associate defending a nation's borders with defending the individuals within those borders, but Hummel and Lavoie show the fallacy of this argument.<sup>18</sup> Once the distinction is pointed out, it becomes obvious that national defense protects the government's sovereignty, and only peripherally protects the individual citizens of the government. National defense and education are both considered at greater length below. Other public-sector output, such as roads and police protection, also have been claimed as public goods. While they will not be examined specifically in this paper, the private production of these goods has been analyzed by other authors who have shown the advantages of private-sector production.<sup>19</sup>

The concept of a public good is vague enough that many goods might in some sense be called public. However, the concept of Samuelsonian publicness has a precise mathematical definition that allows empirical measurement of Samuelsonian publicness. If a good is Samuelsonian public, the marginal cost of adding an additional consumer is zero, and this can be tested with data on the cost of public goods. Empirical studies on many goods confirm that government output empirically is a private good, not a public good.<sup>20</sup> Legislation—the cost of passing laws—would seem to be about as public as any governmentally-produced good, because laws passed for one person can costlessly cover others, yet when subjected to an empirical test of Samuelsonian publicness, even legislation turns out to be primarily a Samuelsonian private good.<sup>21</sup> One might debate about what

<sup>18</sup>Jeffrey Rogers Hummel and Don Lavoie, "National Defense and the Public Goods Problem," *Journal des Economistes et des Etudes Humaines* 5, nos. 2/3 (June/September 1994): 353–77.

<sup>19</sup>Murray N. Rothbard, *For a New Liberty* (New York: Macmillan, 1973) gives a good explanation of how the private sector is a superior alternative to government in all cases, and defends the idea of an orderly anarchy. Bruce L. Benson, *The Enterprise of Law: Justice Without the State* (San Francisco: Pacific Institute, 1990) gives a detailed discussion of the evolution of private law, showing its advantages over public-sector legal systems.

<sup>20</sup>A discussion of the literature, with empirical tests for many local public goods, appears in R.A. Gonzalez, T.S. Means, and S.L. Mehay, "Empirical Tests of the Samuelsonian Publicness Parameter: Has the Right Hypothesis Been Tested?" *Public Choice* 77, no. 3 (November 1993): 523–34.

<sup>21</sup>See Randall G. Holcombe and Russell S. Sobel, "Empirical Evidence on the Publicness of State Legislative Activities," *Public Choice* 83, nos. 1/2 (April 1995): 47–58 for empirical evidence.

one means by the term public good, but if one takes the precise Samuelsonian definition, empirical evidence shows that the government produces private goods, not public goods.

### A Positive Model of Government

The theory of public goods is on shaky ground if it is to be used either to explain or justify public-sector production. The previous two sections have shown that, first, both theoretical and empirical evidence show that the private sector can produce public goods efficiently, and second, that most of what the government produces is not a public good anyway. Note the limited nature of this claim. The argument says nothing about whether it is efficient to produce certain goods in the public sector, but only demonstrates that public goods theory fails on both theoretical and empirical grounds as an explanation for what goods are produced, or should be produced, in the public sector. How can public-sector activity be explained from an economic standpoint? This section describes a positive model of government to use as a foundation for understanding the government's role in the production of goods, services, and transfers. A more complete description of the model outlined here is found in Holcombe, *The Economic Foundations of Government*.<sup>22</sup>

Recent interest in the contractarian model of government has promoted the idea that governmental institutions can be designed for the mutual benefit of all citizens, reinforcing the public goods view of public production.<sup>23</sup> These models stand on an economic foundation in the sense that governmental institutions are developed as a result of mutually-beneficial exchange and gains from trade, but have been criticized because the contractarian model is based on agreement as the foundation for government.<sup>24</sup> As a matter of fact, governments historically have been imposed on some individuals by others, and continue to hold their power by force, not agreement. No matter how much a person might actually agree with the goals and purposes of government, ultimately the government uses the threat of force to create compliance with government rules.<sup>25</sup>

<sup>22</sup>Randall G. Holcombe, *The Economic Foundations of Government* (New York: New York University Press, 1994).

<sup>23</sup>See John Rawls, *A Theory of Justice* (Cambridge, Mass.: Belknap, 1971); Robert Nozick, *Anarchy, State, and Utopia* (New York: Basic Books, 1974); and James M. Buchanan, *The Limits of Liberty: Between Anarchy and Leviathan* (Chicago: University of Chicago Press, 1975) for examples. Scott Gordon, "The New Contractarians," *Journal of Political Economy* 84, no. 3 (June 1976): 573-90, has referred to these three individuals as the new contractarians.

<sup>24</sup>See Leland B. Yeager, "Rights, Contract, and Utility in Policy Espousal," *Cato Journal* 5, no. 1 (Summer 1985): 259-94.

<sup>25</sup>The government will be better off the less force it has to use, so it has an incentive to entice people to cooperate. This issue is discussed below.

Consider Buchanan's model of a social contract being negotiated from the hypothetical starting point of anarchy.<sup>26</sup> In Buchanan's model, all must agree that they are better off with than without the social contract, which constitutes a conceptual agreement with the contract. In fact, in a Hobbesian anarchy, nobody would be very well-off. The weakest would be subject to predation by the strong, but even the strong would find little to take from the weak, because the weak would have little incentive to produce if they had no way to retain any benefits from their production. In this situation, a Pareto-superior move could be made in which the strong make a believable promise to the weak that if the weak just give them a fixed percent of their income—say 30 percent—the strong, in exchange, promise not to take anything more from them.

Such a promise makes both the weak and the strong better off because the weak now get to keep 70 percent of what they produce rather than having everything taken from them, while the strong get everything they produce plus 30 percent of what the weak produce. While this outcome would likely fail the Rawls "veil of ignorance" test,<sup>27</sup> it more realistically depicts the way that, throughout history, some people have conquered others in order to enhance the wealth of the conquerors. Prior to the agricultural revolution, bandits preyed on groups of individuals, but the advent of agriculture tied individuals to fixed locations. It then became more efficient for those bandits also to tie themselves to fixed locations in order to continue preying on those who were producing, and also to try to prevent competing bandits from taking their wealth while the original bandits were elsewhere. The strong become the government, while the weak become the government's citizens and pay them tribute.

The citizens of this government are the source of the government's wealth, but the existence of a government creates an opportunity for other powerful individuals to overthrow the government to capture that wealth. Thus, the government has an incentive to protect its citizens, because it is protecting its own source of income. Citizens of the government pay their taxes, and in exchange the government protects them because the citizens produce the government's income. There is a natural exchange of protection for tribute, which is the fundamental exchange relationship that binds a government with its

<sup>26</sup> Buchanan, *The Limits of Liberty*.

<sup>27</sup> Rawls, *A Theory of Justice*. Here he argues that institutions should be agreed upon from behind a "veil of ignorance." From behind the veil, nobody would know what their identity would be after the veil is lifted. Thus, from behind the veil, everybody would have an equal probability of being any member of society after social institutions were designed. If one did not know whether they would be in the strong or weak group, it is unlikely that they would agree to give more to those who happened to be in the strong group after the veil was lifted.

citizens. The citizens benefit because they receive protection, and they have an incentive to comply because the government threatens to use force against those who do not comply. The government benefits because it receives its revenue from the citizens, and it has an incentive to provide them protection because it is protecting its own source of income.

This model explains the government's activities as a function of the private interests of those who run the government. In this model, the government has an incentive to constitutionally constrain its taxing power, because by guaranteeing its citizens that they profit from their productivity, citizens will be more productive, and there will be more for the government to take. Constitutional constraints benefit the government, in contrast to the contractarian paradigm where constitutional constraints are imposed on the government by citizens who want to constrain government power. The government has an incentive to protect the rights of its citizens to ensure their productivity. The government then has an incentive to engage in other forms of public-sector production because it can assign itself a monopoly and receive monopoly profits, further enhancing the profitability of governing.

Democratic election of government leaders, with strong advantages to incumbents, also makes sense as a way of maximizing government profit. By allowing elections, government leaders channel the resources of potential challengers into elections rather than into violent overthrow. People who want to take over dictatorships must do so by force, creating a threat to dictators, and requiring that resources be devoted toward protecting the government from revolutions. Democracies can save those resources, which makes governing potentially more profitable as well as less physically threatening.<sup>28</sup> Introspection helps reinforce this idea that democracy is desirable for political leaders. Which would you rather be, a democratically-elected political leader, or a dictator who holds on to the position by threat of force?

Holcombe develops this model of government in further detail, but this overview is sufficient for the development of a theory of the theory of public goods.<sup>29</sup> The point is that economic theory suggests that people are likely to act in ways that further their own interests rather than the general public's interest. The public goods theory of public expenditure suggests that the government acts

<sup>28</sup> Leaders of democratic governments also must find some comfort in the thoughts that if they are unseated, they can return to the private economy with enhanced profit opportunities, as opposed to living in exile, or worse. For a discussion of the merits of democratic government in this context, see Dan Usher, *The Welfare Economics of Markets, Voting, and Predation* (Ann Arbor: University of Michigan Press, 1992).

<sup>29</sup> Holcombe, *The Economic Foundations of Government*.

in the public interest, but an alternative view is that government activities are undertaken for the best interests of those who govern. Fortunately, because the income of the government comes from the productivity of its citizens, there is often considerable overlap, so that what is in the interest of government's citizens is also often in the best interest of those who govern, but from an economic standpoint, it is still more satisfying to explain the government's activities in terms of the interests of those who make public-sector decisions, rather than in terms of the public interest.

### **National Defense**

The prime example of a public good in traditional public finance theory is national defense, and the model of government just described presents an alternative to the public-goods explanation for government provision of national defense. As already noted, the market can produce public goods efficiently, both in theory and in practice, so even if national defense is a public good, the market that produces public goods like television broadcasts and microcomputer software could also produce other public goods. Perhaps there are other good reasons why the market could not produce national defense, but the earlier analysis of public goods theory, buttressed by real-world examples, should dispel the myth that public goods have to be produced in the public sector. In short, public goods theory cannot explain why the government produces national defense.

The exchange model of government described in the previous section explains the production of national defense as a result of the self-interest of those in government. The government gets its income from its citizens, so it has an incentive to protect its source of income. Government-income maximization as a motive for national defense also has the advantage that it clearly explains why nations engage in all kinds of military activities around the world when the nation's citizens are in no danger from foreign invasion. Why did the U.S. government invade Kuwait in 1991? The invasion of Kuwait by Iraq posed little threat to U.S. national security, but did pose a threat to U.S. income. The exchange model of government has the further advantage that it does not rely on the public spiritedness of those in government to produce benefits for its citizens. Rather, it shows the production of national defense as an activity that benefits those in government directly by protecting their source of income.

On many grounds, the theory that national defense is a product of the exchange of protection for tribute is more persuasive than the theory that government produces national defense because it is a public good. The government produces national defense because it protects the government's taxpayers, so protects the government's source of income, and benefits those who earn

their incomes in government. This explains the government production of national defense, but is only a start toward describing a theory of the theory of public goods.

### Legitimacy as an Asset of the State

If government does produce national defense in order to protect its source of income, it will want to protect its income at the lowest cost possible. When considering national defense, this means protecting its income from foreign aggressors, but governments find threats at home as well as abroad. The government will also want to minimize the costs it incurs in gaining compliance of its own citizens with its policies. Through the use of intimidation and force, governments can get citizens to comply with its desires. Tax evaders face tax court and jail, for example, and may have to play IRS benefit concerts, like Willie Nelson, to pay back taxes.<sup>30</sup> The government can save resources, however, if it can get citizens to want to voluntarily comply with its policies. In order for citizens to want to help the government, government action must appear to its citizens to be legitimate.

Democratic government itself is a mechanism for producing legitimacy because if people vote for their leaders, then their leaders have the legitimate role of acting as representatives of the citizens. Citizens may not agree with their representatives' actions, but they are inclined to agree that the representatives have the right to act for them because they were elected through generally agreed-upon electoral institutions. Similarly, constitutional constraints that specify the role of government, along with government apparatus such as courts, a division of powers, and a well-defined procedure for undertaking government action all add to the perception of legitimacy on the part of government leaders. The more legitimate the government appears, the easier it is to get citizens to comply. Thus, political institutions have symbolic value in addition to their purely practical value as a collective decision-making mechanism.<sup>31</sup>

### Public Education and the Legitimacy of Government

Government benefits if it is perceived as a legitimate institution because it is then less costly for those in government to persuade the government's citizens to

<sup>30</sup>In addition to helping Mr. Nelson pay the taxes the IRS claimed he owed, the concerts Mr. Nelson played also served to demonstrate in a very visible way that the IRS is serious about enforcing its claims.

<sup>31</sup>For a discussion of the symbolic uses of politics and the way that politics conveys the perception of legitimacy on government actions, see Murray Edelman, *The Symbolic Uses of Politics* (Urbana: University of Illinois Press, 1964). See also Douglass C. North, *Structure and Change in Economic History* (New York: W. W. Norton, 1991); and idem, "Ideology and Political/Economic Institutions," *Cato Journal* 8 (Spring/Summer 1988): 15–28.

comply with its mandates. Thus, the government has the incentive to create the impression among its citizens that its actions are legitimate. It can do so by creating institutions that give the impression of adherence to generally agreed-upon rules, and by creating democratic processes that foster the image of consensus in collective decision-making.<sup>32</sup> Government can further reinforce its image of legitimacy by creating propaganda that brainwashes citizens to respect government institutions and processes.

As a simple example, the right to vote allows democratic selection of leaders, which brings about many advantages. Among those advantages is that it conveys legitimacy to the decisions that representatives make because, supposedly, those decisions are representative of the representatives' constituents. Thus, the government has an incentive to encourage voter turnout in order to foster the image that political leaders are chosen by the people, and has an incentive to instill patriotic feelings about the fairness and representativeness of the process by which leaders are chosen. This makes the government appear more legitimate, and makes it less costly for government to get its citizens to comply with its wishes.

In contrast, the ideas that one voter's vote makes no difference because it will not change the outcome of an election, that voters are therefore rationally ignorant of most political issues, and that the political decision-making process is dominated by special interests rather than representative of the general public interest reduces the appearance of legitimacy, and can make it more costly for government to create compliance with its policies. For this reason, Kelman argues against public-choice theory, reasoning that teaching it erodes public spiritedness because it makes the government appear less legitimate.<sup>33</sup>

If the perception of legitimacy is important to a government, and if that perception can be influenced by controlling the flow of ideas to the government's citizens, then the government has an incentive to take control of the institutions that influence the ideas of its citizenry. One has no trouble understanding why dictatorships demand government control of the mass media, or why freedom of the press is viewed as a fundamental check on government's power. However, such heavy-handed controls make it obvious to citizens that they cannot trust the information they receive. Governments can still control the flow of ideas without controlling the mass media, if they can control the education system. The education system exposes students to

<sup>32</sup>Governments need not be democratic in order to create the impression of legitimacy. If citizens believe that their rulers are appointed by the gods, or are themselves gods, such as the Pharaohs in ancient Egypt, or if citizens believe that hereditary monarchy is a legitimate way of determining political leadership, then the actions of leaders can carry with them the perception of legitimacy.

<sup>33</sup>Steven Kelman, "'Public Choice' and Public Spirit," *Public Interest* 87 (Spring 1987): 80–94.

ideas, sets up a system of rewards and punishments to encourage students to retain ideas approved by the system, and when the university education system is included, also undertakes research to develop new and improved ideas.

Even in centrally-planned economies that control the mass media, family and friends provide a network through which individuals can receive information and ideas, which then can be evaluated on their merits. This is a difficult network to control. The education system has an advantage over these other methods of information dissemination, however, because it provides an incentive for the student to retain the information approved of by the system. Successful students are those who are best able to arrive at institutionally-approved answers.

The challenge to the state is to make institutionally-approved answers state-approved answers, and the best way to accomplish this is to take over educational institutions and make them state-run enterprises. By nationalizing the education industry and making teachers state employees, teachers naturally have the incentive to side in favor of the state whenever there is a question. Teachers become tools of state propaganda, and often explicitly so. It is not uncommon to argue that one of the main goals of public education is socialization, and that schools should make students into good citizens. The perception of legitimacy of the government is thus enhanced through public education.

The tenure system is an integral part of the nationalization of education. Without tenure, teachers could lose their jobs and end up back in the private sector. Thus, teachers would have more of an incentive to examine the relative merits of the public versus private sectors. Tenure guarantees teachers a government job for life, reinforcing their pro-government sentiments. Support of tenure as a method of *preserving academic freedom may have some merit for college professors, but this does not explain why librarians receive tenure, or why elementary school teachers receive tenure. Indeed, while tenure is the norm in both public and private universities, in elementary and secondary education the norm is that public school teachers have tenure while private school teachers do not. Teachers with guaranteed lifetime government jobs are more likely to be sympathetic to government propaganda, and thus help reinforce ideas about the legitimacy of government action.*

State financing of institutions of higher education includes a substantial research component. The relationship between research in the sciences and government interests is obvious enough that it needs no lengthy discussion, because university science research and defense technology are so closely related (and often controversial for that reason). But why would the state benefit from subsidizing research in history, languages, or social sciences? These disciplines develop ideas which can enhance the appearance of the legitimacy of the state, or detract from it. Ideally, from the perspective of the state, research in social sciences and related areas

would bolster the appearance of legitimacy, making it less costly for the government to gain compliance of its citizens. By making researchers government employees, the researchers have an incentive to push the agenda of the state.

The state could force researchers to produce research that only supports the state's positions on issues, but the state is much better off if researchers voluntarily want to enhance the legitimacy of the state in their research. The state benefits because, first, it is cheaper to get researchers to go along if they want to go along, and second, the resulting research will have more credibility if it is not forced, further enhancing the legitimacy of the state. Thus, public educational institutions benefit the government by teaching concepts that enhance the legitimacy of the state, and by undertaking research that furthers the appearance of legitimacy. Public employees have the incentive to promote ideas that enhance the appearance of legitimacy of the state, but they are not forced to do so.

One justification traditionally given in the economics literature for government production of education is that there are spillover benefits from education. We all benefit from living in a more educated society, so individuals have an incentive to underconsume education. The remedy is public education. Note that if the problem were really just that individuals have insufficient incentive to obtain education, a subsidy would internalize the externality, and public schools would be unnecessary. Indeed, private schools are often criticized despite their superior ability to produce academic achievement, because private schools do not socialize students as well as public schools. While individuals do have the freedom to choose private schools, they are not subsidized to the extent that public schools are, so one must conclude that the government's interest is in public production rather than just encouraging more educational activity.<sup>34</sup>

The view that government produces public education to disseminate propaganda to enhance its appearance of legitimacy, and thus to lower the cost of citizen compliance, is more compelling than the traditional argument that the government is internalizing an externality on two grounds. First, it is consistent with the differential treatment of private schools. Second, it shows that the state has the economic incentive to produce education. Public education is not produced because the government wants to do good things for its citizens; rather, it is produced because government wants to control their ideas to enhance its power.

<sup>34</sup>Private schools do receive some state benefits. Scholarships, research grants, and so forth are obvious examples. They also may take advantage of non-profit status to avoid taxation. Increased subsidization of private schools might indicate a more democratic society in which interest groups wanting to have private education are able to weigh in with their political demands. A contrary viewpoint is that state subsidies go hand-in-hand with state control, and that the government would benefit from a takeover of private schools, facilitated by subsidization.

### Public Goods and the Perceived Legitimacy of Government

Having described a model of government and explained the rationale for public education within that model, a theory of the theory of public goods is now relatively straightforward. The theory of public goods is a product of academicians working within the state-subsidized higher-education system. Public goods theory justifies government production on the grounds that the citizens of a government benefit from that production. Individuals who believe this theory are more inclined to view government activity as furthering the well-being of the government's citizens, and thus are more inclined to view such government activity as legitimate. The theory of public goods furthers the government's own interests, and educators, as a part of the state-controlled education system, have an incentive to promote the theory in order to support the state that supports them.

While an overwhelming majority of educators work at government institutions, a minority are employed by private schools. The government has so thoroughly taken over the education industry that those in private institutions have an incentive to adopt the same views as their government-employed colleagues. For one thing, private institutions depend on the government for research funding, student loans, as well as scholarships, and for tax laws that favor private donations to the institutions. Second, there is much movement back and forth from public to private institutions as faculty change jobs, blurring the distinction. Third, academic disciplines rely on a consensus to determine what ideas have merit for publication in scholarly journals, for student textbooks, and even for professional acceptability. Thus, by directly running the vast majority of institutions of higher learning, and by controlling others through grants, scholarships, and other financial means, the government has bought control of the production of ideas, including the theory of public goods.<sup>35</sup> Scholars have an incentive to accept the ideas of the mainstream of their profession or risk a loss of academic stature.<sup>36</sup>

Public goods theory is a product of a state-dominated higher-education system, and is used to bolster the perception of legitimacy of government action. The principles of economics suggest that people tend to act in order to further

<sup>35</sup>Despite working at a private institution, Samuelson, as the foremost promoter of the theory of public goods, has had great faith over the years in the government's ability to allocate resources efficiently. In the 1973 edition of his popular introductory textbook *Economics* (9th ed. published by McGraw-Hill), published in the year of Ludwig von Mises's death, Samuelson forecast that despite the fact that the Soviet Union had a *per capita* income about half that of the United States, the Soviet Union was growing faster and could catch up with the U.S. as soon as 1990, and almost surely by 2010 (p. 883). His promotion of government production of public goods on efficiency grounds fits well with his more general ideas on the efficiency of government production.

<sup>36</sup>Ludwig von Mises provides a good example of this. Because he steadfastly held to his idea that socialism is not a viable economic system, his work was not taken seriously by the majority of his profession until socialism collapsed, 20 years after his death.

their own self-interests, and the model presented in this paper has shown how self-interested behavior can explain the existence of government, and can explain why government produces public goods such as national defense and education. Public goods theory, in contrast, explains the government production of public goods as a result of a benevolent government acting in its citizens' interests, to maximize social welfare. Based on simple economic criteria, a theory of government action based on altruistic behavior should not hold up as well as one based on self-interest. Yet, academic economists accept and promote public goods theory because, despite its anti-economic foundation as a positive theory of government action, its acceptance helps support the public sector that in turn supports academic economists.

### Conclusion

Public goods theory is both inadequate and inappropriate as an explanation of public expenditure. The activities undertaken in the public sector cannot be understood using the theory of public goods, following either of two lines of reasoning. First, there is no reason to believe that public goods can be produced more efficiently in the public sector than in the private sector. On theoretical grounds, there are many reasons why private-sector production of public goods has efficiency advantages over public-sector production, including the ability to reveal consumer preferences for the good, the elimination of the excess burden of taxation, and the existence of a profit motive for private sector producers. Empirically, we observe many public goods that are successfully produced in the private sector, ranging from television and radio broadcasts to microcomputer software. Therefore, identifying a good as a public good is not sufficient to argue that efficiency considerations require public-sector production. Second, using the formal economic definition of publicness, government output is not a public good anyway. Empirical studies of public sector output show that when the rigorous definition of Samuelsonian publicness is used to characterize public-sector output, public-sector production does not have the characteristic of jointness in consumption that was identified in theory by Samuelson. Because empirical evidence shows that government output fails the test of publicness as economists define the term, public goods theory cannot be used as a basis for explaining or justifying public expenditures. Yet, the theory of public goods persists as a justification for government production.

The persistence of the theory of public goods makes sense if the theory of public goods is considered as a tool of the government to justify the legitimacy of its activities and make it less costly to get citizens to comply with its wishes. The theory is promulgated by the state-supported education system, giving

educators, as employees of this state-supported industry, an incentive to promote the theory of public goods. This all-purpose justification for government activity serves the government well by arguing that its activities are legitimate means of enhancing social welfare, in order to create ideological support for the public sector. The theory of public goods does not do a very good job of explaining what the government actually does, or should do, but can be better understood as a tool that the government employs for its own benefit.