Introduction: public goods, social enactions

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The definition that economists offer of a 'public good' restricts the commonsense meaning of the expression. In general, the adjective 'public' suggests universal accessibility and some level of state involvement. For economists, the public characteristic of a good results from its availability and allocation. In the work of Paul Samuelson in the 1950s, this broader traditional concept was formalized, so that membership in the category of public goods came to be determined by two properties.[1] The first property is called 'non-rivalrousness': consumption of the good or service by one individual does not reduce the quantity available to others.[2] The second property is 'non-excludability': if it is difficult or impossible to exclude from the enjoyment of a good or service any user who refuses to pay, then the good or service is termed 'non-excludable'. With his canonical definition, Samuelson sought to answer two questions. How should one define collective-consumption goods, that is to say, goods for which there is no distinction between individual consumption and total consumption? How should one characterize the optimal allocation of the resources necessary for the production of these goods? The answers were derived from a model designed to determine the optimal allocation in an economy in which there are two kinds of goods.[3]

The Samuelsonian formalization of public goods forms part of the wider extension and application of theoretical economic thinking to the public domain: the economic sphere is defined in terms of a specific goods-directed relation between agents. Economic agents are characterized purely through the operations that they carry out on physical goods.[4] Public goods are constructed axiomatically, without any reference to their socialization. As a result, seemingly unimpeachably public goods, however pure, manifest ambiguities of construction. Recent debate has led to radical contestation of the identification of existing public goods with the formalized and strictly incomparable class of Samuelsonian public goods.[5]

In the case of the lighthouse, it is almost impossible to prevent a ship from determining its position using the lighthouse signal, and that ship's access to this signal does not deprive any other maritime vessel. On the other hand, as Coase suggests, it is often possible to associate a lighthouse with the nearest port whose facilities are used by each individual ship.[6] In the case of national defence, a frequently cited example of a fundamental public good, different levels of protection afforded to various populated zones and conflicting defence priorities for certain population groups reveal rivalries among the beneficiaries. Similarly, highway tolls, while making it possible to charge motorists according to use, can result in the exclusion of some users from the highway network, another public good. Thus the existence of a public good depends on the space relative to which it is defined and relative to the authority on which it is based. The necessity for the state to assume direct production of the good is therefore consubstantial with that good. It can set out provision specifications and organize regular tenders for private operators.

The public aspect of certain goods can also be transnational: for example, the international postal service possesses the characteristics of a global public good. Of course, there may be weak national links that do not distribute letters correctly. However, Article 1 of the Universal Postal Union's Convention states that 'all member countries shall ensure that users/customers enjoy the right to a Universal Postal Service involving the permanent provision of quality basic postal services at all points in their territory, at affordable prices'. The intangible operational rule of the Universal Postal Union is that each postal administration retains the taxes that it levies.[7] The tax retention (or non-distribution) rule, observed throughout the 90-year history of the existence of the UPU, rests on the assumption that letters sent from one country to another match the replies. Despite contrary statistical evidence, the principle of reciprocity won out in justifying the cooperative construction of this global public service. In the case of the postal service, as in the other cases discussed above, the public good involved is not a mirror image of a private good. It originates in a different rationale grounded in a philosophy of 'public service'.

Samuelson's account of public goods, in its refined and problematized variants, still constitutes the benchmark reference in the field, and remains the cornerstone of public economics. Public goods must be produced in sufficient quantities, yet the traditional mechanisms of private enterprise do not work. However, arguments for the traditionally acknowledged role of state intervention can equally be derived from the other social sciences. The contributions in this volume of proceedings from a conference entitled 'Public Sector, Private Sector: New National and International Frontiers', held in October 2003, are evidence of the immense current relevance of the economic concept of public goods. The papers describe recent advances that have transformed and strengthened the concept, yielding a series of concrete applications, in particular in the framework of Europe. Public goods, public sector? The assimilation of the two is far from obvious. In any event, it does not result as by default from the processes of market extension and protean liberalization currently affecting economies globally. This does not mean that the contributors to the volume judge the pressures in favour of privatization unimportant; nor does it imply that the latter are decreasing. However, it does involve moving to a timeframe appropriate to conceptual analysis and development, in order to present and discuss the lessons of lengthy apprenticeship and the fruits of international debates in a field that captures the interest of everyone.

In the past 50 years, the concept of public goods has experienced four major transformations. First, public goods have come to be recognized as social constructs, and not simply natural objects, or matters of fact, of which general cognizance is sufficient for their existence. The identification and management of a public good are contingent on a series of choices. That does not mean that any private good whatsoever can be turned into a public good by communal decree; it means that some goods which may fall within the definition of a public good can be placed on one side or the other of the dividing line. In the case of roads and tolls, while it is unthinkable to install tollbooths everywhere in order to control all access to the road network, it is possible to build a separate system of motorways, and then to decide whether to leave it public (as in Belgium) or to privatize it (as in France). Global public goods, such as financial stability or the preservation of the ozone layer, are only clearly identifiable at the end of complex processes of discovery, and are very often revealed through negative experiences due to knowledge gaps or ignorance.

The second transformation is recognition of the global dimension of public goods. Knowledge, the diffusion of which enables individual enrichment without detriment to other users, cannot easily be contained within national borders. However, consciousness of the global repercussion of the existence of certain public goods is a recent development. In the case of knowledge, the worldwide management of patents is a dazzling illustration of this state of affairs. The new perception of the global dimension is intensified when one draws up a list of the global interdependences that include for example climate degradation and financial instability, and that can upset individual lives, even those apparently best protected initially. Terrorism thus appears as a negative global public good, and the broad imperatives of development, such as growth in the level of education and knowledge, constitute positive public goods. The big question concerns the consequences of these identifications.

The third transformation is the foregrounding of the multi-agency nature of public goods production. It has long been acknowledged that the production of public goods involves multiple interactions, including the potentially monopolistic behaviour of the state towards consumers or the interactions due to networks (for example, roads, postal services, railways). The novel element in the third transformation is an emphasis on the multiple cooperation and partnerships necessary for the efficient development and production of public goods.

The fourth transformation, which follows from the previous three, concerns the intrinsically dynamic nature of public goods, in both their recognition and management. Consciousness of the interdependences and interactions is slowly but continuously reconfiguring the extension of the domain of public responsibility. The different levels and modes of this responsibility are then themselves subject to evolution. The example of Europe is a test case, as it engages in the redistribution of monopolies and regulation in response to the deepening imperatives of European construction.

These four transformations are relative innovations. None breaks with the conceptual frame of the existing structure. However, taken together, the texts in the volume have important practical and theoretical consequences. Each contribution starts from a partial or total renewal of the foundations of public goods, leading to conclusions in political economy. They sketch the features of a mixed economy, for which a comprehensive theory and account of the conditions of its implementation have yet to be developed. Fifty years ago, the activities and roles of private and public sectors could be contrasted in a straightforward way, and it was appropriate to look for equilibrium conditions and their complementarity. Since then, the erection of a boundary between public and private, whether in favour of one or the other (nationalization or privatization), is insufficient grounds on which to base a project, much less a guarantee of credibility or an operational specification. The options are not interchangeable. They must be evaluated in the broader and more complex context of social logic, without which they collapse into ideological electives.

At the core of the questions about a mixed economy lies a variety of private sector motivations and behaviour. Should the shareholder image be set against that of not-for-profit organizations? Both types of organization continue to evolve. The roles ascribed to each and the respective areas of engagement may change over time. For example, 50 years ago, networks of low-cost sales cooperatives (groceries) developed in France. In the main, the clients of these 'co-ops' were the low-income elderly, formerly termed 'economically vulnerable', now renamed the 'senior poor'. The co-ops offered a relatively small number of inexpensive products purchasable as single items. The service was provided by a not-for-profit network. The arrival of supermarkets endowed with wide power over the prices and supply of a vast range of products rendered the service provided by the co-ops redundant and obsolete. The local small grocer became more expensive, and catered to a new clientele, and the senior citizen entitlement softened without solving the poverty problem. In other words, the challenge had shifted elsewhere. Not-for-profit organizations are massively present, in other forms and with other beneficiaries, in the fight against poverty. One of the not-for-profit sector's roles is to work at margins that move slowly: the unmet needs of people outside the classical distribution networks, emerging general needs. Home care for the dependent and immigrant literacy are two current examples.

A further matter for reflection is that of the stacking up and coherence of state interventions. The existence of global public goods is clear evidence in support of the emergence of structures of control and decision making at the planetary or at least continental level. The construction of Europe is a daily reminder of this fact: the nation state, if it still has a central role to play, must redefine its functions, caught as it is between a local–regional echelon of increasing importance and a federal entity emergent at the continental level. The question of who should do what is obviously tied to an appreciation of the area of interdependence and solidarity that every public good involves: supranational and global for the diffusion of knowledge, financial stability, global warming and ozone layer preservation; federal for the management of a currency such as the euro, macroeconomic stimulation delivered through a budget and for a policy of scientific research; national for social security transfers; regional and local for large planks of education and training policies. Beyond these relatively consensual examples, the divisions are not self-evident, and the overall architecture requires periodic redefinition.

Beyond the multiplicity of actors and their levels of intervention, the conditions of joint action necessitate more exact specification than in the past. Under what condition is a partnership balanced? Does such and such a pricing policy open up over- or under-investment in the long term? How can the simultaneous presence of transnational firms and supranational organizations be balanced, and what rules of the game should be adopted? When two domains of intervention overlap, for example in internal trade and labour rights, who should take control of potential conflicts and reciprocal dependences? Questions such as these show that subtle argument involving at least two levels is necessary. At the first level are arguments in terms of comparative advantages enjoyed by particular classes of participants by virtue of their orientation, financing or control structure, and at the second level are arguments in terms of interactions and complementarities (or rivalries) between different groups of actors. The principal issue is then evaluation, not limited to the single discrete instantaneous action of a participant, but within a perspective of interaction and learning.

These questions are all the thornier because they bear on the modes of collective control. Democracy presupposes freedom of access to information, a plurality of critical sources and assessments, but also the periodic interrogation if not suspension of advantage at every level. No longer is it sufficient to vote for or against a government, nor can one rely or trust lobbies or pressure groups.

The title of Inge Kaul's contribution hints at her position. She proposes a positive analysis of public goods in non-normative terms. Her argument does not seek to define the contours of an ideal or utopian collective intervention. It aims to delimit and deepen the direct implications of a class of public goods that is still poorly understood. The reader is invited first to follow a conceptual analysis. The pluralization and mobilization of agents, and the extension and multilateralization of viewpoints are immediate consequences of the pragmatic attitude she adopts to cope with a wide variety of contiguous problematics. It rapidly becomes clear that the two attributes of public goods, non-rivalrousness and non-excludability, are neither immovable nor given for all eternity. They are predicated implicitly on a social construction and collective decisions. Hence there is room for manoeuvre in the understanding and enactment of these goods. The determination of a good as public or other depends on the characterization of the context and an enriched family of new determinants. Public and private sectors are endowed with evolving boundaries and promote evolutionary interactions.

Inge Kaul thus shows that the recent extension of the field and the variety of public goods is fuelled by several processes: on the one hand, processes that foster increasing interdependences and their practical consequences, and, on the other hand, initiatives based on voluntarist direct universalization. For example, the discovery of transmission routes of an epidemic and the appropriate preventive and therapeutic actions goes hand-in-hand with discussions of the necessity of universal basic education.

One and the same agent, operating at different levels, may represent the legitimate management of a public good and hence of the general interest, or on the contrary may be found to represent a narrow coterie of vested interests. This is the case, for example, when nation states, in creating redistribution networks for social security, negotiate without an appropriate supranational structure in order to protect their interests in international trade. Derogation from the higher interest of the 'global public goods' that are described in Inge Kaul's text may lead nation states to exhibit predatory or even delinquent behaviour.

The final perspectives to which Inge Kaul's analysis lead are both encouraging and uncomfortable. The issue of global economic and financial interaction is thoroughly expounded, and the necessity of coordination and control associating the multiple agents at the supranational level is advocated in detail. The perspectives are uncomfortable because the pivotal role played by the nation state, endowed with its monopoly on legal constraint, is reaffirmed at the same time as are the opportunistic temptations to which it is subject in the absence of global government. The role of non-governmental organizations (NGOs) is also simultaneously brought into the spotlight and called into question. Is the 'global civil society' that they endorse simply an aberration? The inconsistencies of control at the planetary level and the existence of transversal conflicts (delegitimating several categories of agents and domains) run the risk of partial or sectarian actions on the part of NGOs. In the end, 'conflict management' is also a public good, the production and management of which remain to be envisaged and organized.

Avner Ben-Ner's contribution provides a directly complementary perspective, pursuing the same conceptual strategy of pluralization and contextualization from a different angle. It explores a micro-organizational viewpoint in an implicitly national framework, thereby foregrounding and generalizing the famous argument about 'market failures'. The existence of a public good is a cause of market failure, since it is not produced at all, or at best in insufficient quantities, if one is reliant on the free initiatives of solvent, willing agents. The standard example is private security forces that rich individuals can afford: they do not fulfil the same role as the army and the police, and the latter are necessary. The flipside of market failure is 'state failure', where bureaucrats rule, and a large literature of varied provenance exists on the subject. Should one therefore lump together the institutions of state and market? This facile response has long been discarded, with the arrival of the non-profit private sector, in turn tasting successes and failures. Whether the failures are of the market, the state or the non-profit private sector, there is no room for dogmatism on the question concerning who is best positioned to produce a specific good in a specific context. This is the issue underlying Ben-Ner's text. His responses are detailed and situational.

Ben-Ner begins by enriching the list of criteria for the classification of goods before comparing the conditions of control and production in each case. This leads to a fine-grained analysis of the operational aptitudes of various candidate agents for the production of specific goods and services. It is noteworthy that the author's concrete examples, drawn from North America, are not always transposable into the European context. This observation serves to reinforce the view that no fixed agent type or organization is the intrinsically ideal producer for any given category of needs. Two consequences are immediate. The first is that diversity of actual and potential producers is desirable in itself, and hence constitutes a supplementary public good, the availability of which should be monitored.

The second consequence is that in many cases non-market private organizations, combining the advantages of free initiative with the concerns of public interest, appear relevant. The text concludes that the slow growth of these organizations is based on a series of comparative advantages, without precluding potential disadvantages and handicaps. The final criterion, here as in the preceding text, remains one of the amplitude and effectiveness of the control that the ultimate owners, in their resource allocation and investment decisions, can exercise.

At the conclusion of Ben-Ner's argument, the question surfaces concerning the increasing importance of the explicit customer 'personalization' of certain services, which induces their exit from the strictly market domain in order to thrive in receptive networks having a non-market perspective. Home care for dependent people is a case in point. Should competition be organized or should voluntary care be preferred? Arbitration here rests on the appreciation and organization of the role of family cohesion, and in the end involves carers' career paths and lifestyles. To argue, as the text does, in favour of diversity of producers of goods that are more or less public both outlines and conceals this vast question.

The diversity of public goods development is at the heart of Philippe Herzog's paper. The author describes the difficulty in constructing European public goods. Heterogeneous conceptions of these goods from one country to another make the work of the European legislator very complicated. In the construction of the single market, Europe sought to avoid extinguishing national prerogatives. It established a principle of separation bearing not on the goods themselves, but on the ways these goods are developed. Essential services of a social non-market character are distinguished from other services, and fall outside the scope of the rules of competition and the single market. As Patrick Artus explains in his paper, these are services for which a demand requiring public provision is necessary, such as a public supervisory authority. This principle is insufficient when activities are mixed or hybrid, combining social and economic features, market and non-market elements. Philippe Herzog believes that criteria of social effectiveness should be put in place in order to describe the implementation of services of general interest: the idea is to measure real costs and external effects and to measure these relative to satisfaction indices. A properly funded European statutory monitor compiling these indices would facilitate transnational comparisons of services of general interest.

Patrick Artus's text tackles the question of paying for public services in Europe. The funding principles are completely different, depending on whether services of general interest are provided by private operators subject to specific regulations or on whether strong network effects or natural monopolies prevent the development of those services by the market. Consideration of the infrastructures associated with delivery of public services also modifies the service funding conditions: in the cases of water distribution, telecommunications and transport, should project financing be preferred to public–private partnerships between EU members?

Xavier Greffe suggests that these specific questions be raised within a more general theoretical framework, the elements of which require future elaboration. This theory will include an account of the implementation of public intervention, in other words, a description of the microeconomy of the 'public provider'. The fundamental question of the organization, production and financing of public goods remains a live issue for the state. While the user hopes to enjoy the quality expected of public service combined with the efficiency attributed to the market, these two properties have long seemed incompatible. Between the neoliberal position and the institutionalist tradition, Xavier Greffe argues that a pragmatic approach to public goods production will allow the articulation of global, national and local mechanisms, avoiding arguments couched in terms of isolated unconnected levels taken as ends in themselves. Strategies of decentralization and the construction of networks, markets and hierarchies require holistic consideration and will open the way to increasing dialogue and participation in democratic processes.

Stepping up from the European plane, Claude Henry moves the debate to the planetary scale in his treatment of knowledge as a good, the public character of which is difficult to guarantee. In an issues-driven analysis, he discusses the conditions and consequences of the production of knowledge. First, he notes that knowledge is a public good in itself, but that it is also a precondition of other public goods. It is in some sense a 'super public good'. The text invites the reader to a double pragmatism: upstream, in the organization of research, and downstream, in the use of the results of research for the benefit of all.

Open science must therefore be encouraged. Researchers may be relatively indifferent to remuneration. However, if large budgetary resources are required, as is the case in the majority of scientific fields, then money must be found to guarantee the development and free circulation of knowledge. This involves a double incentive: researchers motivated by the desire for peer recognition, and capital commitments for research operations and infrastructure. In the collective interest, it is therefore necessary to introduce the incentive of market ownership if public funding is inadequate. The incentive is all the stronger where the boundary is fuzzy between 'discoveries' and 'inventions', the former relating to the diffusion of scientific knowledge, the latter to industrial applications. The solution described in the text appeals to temporary patent-based monopolies. Knowledge slips temporarily from public good to 'club good'. Claude Henry presents different ways to calibrate, moderate and manage this lesser evil.

The pragmatism of Henry's text returns in his discussion of the links between knowledge and the public goods of climate and health. The connection between greenhouse gas emissions and global climate degradation is widely conceded, although unproven and unquantified; the links between antibiotic absorption and the resistance of certain bacteria families are amply documented, although in some cases remain conjectural. In these two cases, the uncertain nature of knowledge imposes specific management outcomes. In both cases, the convergence of independent expert opinion and the existence of a fragmented but pertinent scientific basis make possible and legitimate decisions informed by the precautionary principle applied with proper discernment. In both cases, the diversity of national interests has the result that while certain countries endorsed the legitimate scientific results, other countries, subjected to special interests, found ways to avoid endorsement. Hence coordinated and legitimate coalitions of agents are necessary to enforce correct management of these situations.

Claude Henry's analyses bring out the multiple tensions between knowledge as public good and knowledge restricted to a designated group, between the gains and losses associated with application of the precautionary principle and its suspension on grounds of uncertainty. The painstaking exploration of the collisions of short- and long-term horizons, between special interests and the general interest, leads nevertheless to a message similar to that of Inge Kaul: where no global arbitration authority exists, it is necessary to construct intermediate solutions, whether temporary monopolies or blocs of agents and experts, in order to reconcile opinions.

In his decisive contribution, Joseph Stiglitz marshals a particularly rich set of arguments in defence of global public goods. The author sees in the light of market failures the obligation to construct, at the global level, public goods that repair the weaknesses of the structures originally designed to guarantee those goods: international organizations. Too frequently, the international arena is used to remedy public ills that cannot be handled locally. The question of the administration of international organizations and the possible subversion of the actions of these bodies in the pursuit of private aims must be resolved before any construction of global public goods is possible. Joseph Stiglitz examines minutely the roles of the International Monetary Fund and the global reserve system in the international financial system. The creation of special drawing rights emerges as the only specific form of intervention that can bestow on international organizations the legitimacy that governs the construction of global public goods.

In concluding this introduction, it is useful to emphasize the expansionary dynamics that mark current developments in public goods. The conference 'Public Sector, Private Sector: New National and International Frontiers' demonstrated the increasing relevance of research on these goods and the power of the political argument based on the idea of public goods. This relevance may be understood first as directly induced by the diverse and protean processes loosely summarized under the term 'globalization'. Progressive consciousness of the interdependences of the world economy, whether in matters of finance or pollution, and the creation of arenas and regulatory sites on a planetary scale are as much opportunities as impulses in favour of the list of public goods and of better collective control over their production and distribution. One sort of globalization breeds another.

However, this simple response or assessment, likely to excite more unease than enthusiasm, is inadequate if it is interpreted in a simplistic manner as an idealistic or rhetorical proposition. The era of global administration based on the Western world appears ended. In diverse ways, the papers that we have reviewed escape this pitfall. They develop a project of multi-tiered collective deliberation, according to consensual transversal norms.

NOTES

1. Samuelson, P. (1954), 'The Pure Theory of Public Expenditure', *The Review of Economics and Statistics*, **36**, 387–9, and 'Diagrammatic Exposition of a Theory of Public Expenditure', *The Review of Economics and Statistics*, **37**, 350–56. Before Samuelson's work, economists understood the term 'public good' in a broader sense in which state intervention in the production of the goods was an intrinsic part of their definition. See Holcombe, R. (1997), 'The theory of the theory of public goods', *Review of Austrian Economics*, **10**, 1–20; 3. In his 'Idea of a Perfect Commonwealth' of 1754, the philosopher David Hume remarked that society might find advantages in the collective production of goods that are entirely unprofitable for an individual to produce. He looked to mathematicians for methods of justifying items of collective production.
2. In the economics literature, non-rivalrousness is sometimes identified with indivisibility. The non-rivalrousness of a good or service implies that others enjoy the same quantity and quality of the good, whatever the level of use or consumption by an individual. Indivisibility means that it is impossible (either in nature or through a political division) to separate off a single part of the good or service to render possible partial individual consumption. This does not prevent possible individual attribution: one can draw lots for the individual enjoyment of an indivisible good. One example is a family home that members do not wish to carve into allotments, and which is used by one of the legatees. In this sense, non-rivalrousness belongs to the field of politics: it rests on situations of natural or artificial indivisibility, in which pricing on the basis of observed individual consumption is abandoned. It brings to light or constructs a non-market interdependence.
3. Sandmo, A. (1987), 'Public Goods', in J. Eatwell, M. Milgate and, P. Newman (eds), *The New Palgrave: A Dictionary of Economics, Volume 4: Q to Z*, London: The Macmillan Press Limited.

4. The principle of ophelimity is based on the idea that goods are separable, physical entities, characterized by their material features. For this reason, their objective definition is independent of any action involving them.
5. For example, Holcombe, 'The theory of the theory of public goods'.
6. Coase, R. (1974), 'The Lighthouse in Economics', *Journal of Law and Economics*, **17**(2), 357–76.
7. Article 1 of the Universal Postal Service Convention (http://www.upu.int/).