

Public goods as drivers of growth/development

Bem públicos como motores do crescimento/desenvolvimento

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Abstract

This paper frames a broader reconstruction of the evolution of our understanding of the dynamics of an economy through the role assigned to a variety of Pure and Non Pure Public Goods (NPPGs) as development drivers and value creators. It outlines the convergence of two distinct, though major theoretical traditions: the theories of growth/development, on one side, and the debate over role and efficiency of State/Vertical Integrated Firms v/s Market in the provision of goods. Coase (1932) put forward a theory of why either one prevails, as a function of a broad category of transaction costs.

Keywords: development, growth, economic theory.

Resumo

Este artigo enquadra uma reconstrução mais ampla da evolução de nossa compreensão da dinâmica de uma economia por meio do papel atribuído a uma variedade de bens públicos puros e não puros (NPPGs) como impulsionadores do desenvolvimento e criadores de valor. Nesse sentido, o artigo destaca a convergência de duas tradições teóricas distintas, embora importantes: as teorias de crescimento e desenvolvimento, por um lado, e o debate sobre o papel e a eficiência das empresas estatais e verticais integradas vs o Mercado no fornecimento de bens, por outro. Discutem-se as contribuições de Coase (1932), que apresentou uma teoria sobre porque um deles prevalece, em função de uma ampla categoria de custos de transação.

Palavras-chave: desenvolvimento, crescimento, bens públicos, teoria econômica.

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INTRODUCTION

This paper frames a broader reconstruction of the evolution of our understanding of the dynamics of an economy through the role assigned to a variety of Pure and Non Pure Public Goods (NPPGs) as development drivers and value creators. It outlines the convergence of two distinct, though major theoretical traditions: the theories of growth/development, on one side, and the debate over role and efficiency of State/Vertical Integrated Firms v/s Market in the provision of goods. Coase (1932) put forward a theory of why either one prevails, as a function of a broad category of transaction costs. Lange proposed that the State could mimic the Market and be comparably efficient. Samuelson *solved* the dilemma through a division of labor, i.e. by assigning provision of Public Goods to the State, of Private Goods to market exchange. It was time then, that Keynes' work was still being studied and only tentatively applied. A more recent debate has rejuvenated certain Institutional themes, most other issues are still in want of adequate solutions. I only provide some hints about the latter in the conclusions.

I will drive my discussion towards the role in the production and value creation process of a variety of (both material and immaterial) Public Goods. They span obviously a *large set*, closed by the *polar* extremes of Pure Public and likewise Pure Private Goods. The economies of our lives lie somehow in the middle of such polarity and show a rich mixture of goods/properties and institutions to handle them. The discovery of this richness and variety has been slow but steady, fed by both theory and empirical evidence. Marriage with growth/development as the latter's fundamental drivers was a natural though only recent outcome. Now it is generally accepted that *growth* can only be (via) *development*, and that, as a key policy target, development has to be *sustainable*. For this to obtain, development has to be *endogenous*, i.e. based on a social agreement and rooted in resources embedded in a territory or a community, most often in both of them. Such resources are *local* or *shared*. (They qualify as NPPGs). Analysis of experiences of local development (at the territorial, regional, district levels, for instance) have been fundamental in generating our new awareness.

Section 1 recalls the definition of goods' properties accepted by the economists and introduces the issue of public goods' governance, while in Sect. 2, Non Pure Public Goods (my main focus) are defined as the union set of Local (as *belonging*) Public Goods (LPGs) and Common Pool Resources (CPRS), *resources* that are *shared*. Public Goods, originally consumers' goods, have been re-conceptualized as production resources by Hardy and Ostrom, and this *surprisingly* leads (sect. 3) to an overview of the theory (better, theories) of growth. The latter's evolution and final crossbreeding with the analysis of a variety of experiences of local development, have expanded the realm of NPPGs (reviewed in Section 4), opening up new vistas on production and distribution, examined in the concluding Section 5.

ON THE NATURE OF GOODS, THE WAY ECONOMISTS SEE IT

(Pure) Public Goods (PGs) were born as “collective consumption goods” (Samuelson, 1954), defined in terms of the property of *static* non-rivalry, i.e. goods for which the cost of having a marginal consumer is zero, though her/his benefit be positive. However, nobody will want to contribute proportionally to his individual benefit to the cost of provision. Or, she/he has no economic incentive to reveal her benefit and be charged accordingly. A *contribution problem* arises, dual to the revelation one. Non-rivalry leads generally to free riding behavior on the part of selfish individuals and a decentralized market institution or pricing scheme becomes impossible. The solution to problem posed by non-rivalry was seen (in Samuelson and later) in the state provision of public goods. The theory of *Pure* Public Goods became the theory of Government expenditure¹. A second property to define PGs was added, i.e. that no consumer could be excluded from its consumption. Hence, no profit-motivated agent would have an incentive to produce and/or to maintain one such good, as he could not rip any monetary or else benefit. Non-excludable goods would be condemned to be under-produced or not be produced at all by the private sector (an *incentive compatibility problem*). This added more arguments to the cause in favor of a public provision of Public Goods, to the point they became identified with State, in a sort of division of labor with market/private goods.

In the final (Samuelson/Musgrave) agenda, PGs are (basically) *consumption* goods entering utility functions, and the organization of their production was not discussed being a task for the fiscal budget. Both non-rivalry and non-excludability generate externalities, *though different*. For non-rival goods the marginal *social benefit* is the sum of the marginal benefits of all consumers, the more they are the higher it is. This implies the existence of a *social* reason to share consumption/usage to maximize social net benefits, extending at no extra-cost the enjoyment of a positive externality. There is, in other words, a *social bonus* to non-rival goods.

Was such an alternative of market/private good economy *versus* state/public goods economy, a *trap*? It took a long logical process and a number of steps to realize it.

First, it was discovered that economic goods were not as simple, locked in the duality private/public: they spanned varieties, were continuously multiplied by social/institutional and economic processes, and had many more economically relevant characteristics. Reflection took three directions.

1. The first led to a re-visitation of the concepts of (non)excludability and (non) rivalry. A non-excludable good is one for which excludability is unfeasible or has an infinite cost. Thus, excludability is a matter, on top of *feasibility*, of *costly institutions* (see, for instance Pagano and Vaitero (2015)), and it is a typically social construct (as defined in Wikipedia). With non-excludable goods, un-cooperating agents enjoy (positive and/or negative) externalities.

The decision of making a good excludable implies setting up a set of rights (see e.g. Mello (2016) and an enforcing mechanism (together, they make a system of property right(s). The degree of excludability is increasing in the cost of such a system.

In between excludable and non-excludable goods, are *partially excludable goods*, for which the cost of exclusion is finite. Economies that are intermediate between the Pure Public and the Pure Private one, can also be organized (Buchanan's Clubs and Tiébout's cities are classical examples to be discussed later).

Likewise, one should distinguish between *static rivalry* and *inter-temporal rivalry*. The discussion only focused on the former type only. But while excludability is most often an institutional property which may depend on its technological feasibility, (non)rivalry is often in *the nature of the good*, or it is due to the latter being given in finite quantities, i.e. as it is nature-made (a *natural resource*), or in any case if it is a stock at a point of time. That PGs are characterized by non-rivalry, is tantamount to saying that they have infinite carrying capacity (as resources) or that the opportunity cost of having a marginal user is nil.

In between rival and nonrival goods are *partially rival goods* that can be defined in terms of their carrying capacity and/or of the opportunity cost .

I) either they have a finite Carrying Capacity, CC,

II) or the opportunity cost of the marginal user is at least as high as the positive cost of provision.

The notion of CC is more appropriate when dealing with a (natural, man-made) resource stocks for production purposes. Any available amount has its defined CC, at least in principle. The notion of Opportunity Cost for the marginal user, on the other hand, seems to be more appropriate when considering consumer's goods. Thus, more generally, one can define *degrees of rivalry*.

Later on, more classes of non-excludable goods were found², supporting the view that non excludability is neither a technological nor an immutable, *naturally* inbuilt property". In this sense it is inherently different from (non) rivalry.

2. Global Public Goods were then identified as a public good "that (...) is available more-or-less worldwide." (or rather, conceptually construed) , and, thus, implicitly *local* public goods appeared. Public (as well as private) goods had to be qualified in terms of how far their characteristic *reaches*.

3. Finally, the opposition between state and market arrangements was no longer *generally* applicable, to begin with, because both of them can be inefficient. In certain cases, organizations alternative to either one can be conceived and well function. While for global public goods it is difficult to think and set up (supranational) governance bodies, many other public goods are successfully produced in the private sector.

While the discovery of global public goods forces us to think to what extent goods *belong*, the reconsideration of alternative goods provision arrangements opens the gate to rethinking the institutions set up to care for resources and organize their

reproduction. A strong awareness has this way emerged of the existence of a new societal structure with multiple institutional layers, evolved to create manifold non-material goods and to cater for new necessities (a *new medieval like* society, according to Desai).

At the end, it was the issue of (non)-excludability that resulted *disturbing* (for it undermined a market arrangement) and therefore attracted the most attention. It better fitted with the then current discussion of externalities focusing on the implications for distinct governance structures and pricing schemes, in the General Equilibrium and Pigou's traditions.³ In ensuing research, the collective action problem associated with the non-excludability of PGs will find solution alternative to state provision, by simply *moving* them into the (sub)set of excludable goods.

Since the very beginning, the conceptual debate private/public goods got restricted to governance issues. The positive externalities generated by non-rivalry for society were entirely forgotten.

ON NON-PURE PUBLIC GOODS, NPPGS

Pure goods are those holding both characteristics *globally* in the sense of *erga omnes*. There are plenty of goods, as we have seen, holding either one of the properties of the private goods but not both. In this sense they can be treated together with the public ones. This is the case for non-excludability, of course, on which research concentrated for it prevents the functioning of a proper market mechanism. For this reason only, we will define Non-Pure PGs, NPPGs, some *Local*, some *Commons*.

1. The notion of *Local Public Goods* (LPGs) was a by-product of addressing a *specific question*: under what conditions can one replicate the market so as to efficiently handle public goods as *consumers' goods*? To reach such a result, PGs had to be made excludable, but they also had to become *local* in some sense, *to retain non-rivalry*. The issue of production organization now emerges, LPGs are *socially produced*; on the other hand, they remain *final products for consumers' welfare*.

In (Buchanan's) club economies, members pool together resources to generate societal externalities. Sharing the cost of producing public services, privatizing the production of public goods "to bridge the gap" with private goods, was one chosen way to reintroduce excludability. Club theory solves the problem of the individual's *contribution* (through a membership fee) while *incentive compatibility* issue cannot arise as LPGs are non-rival *within* the club. Participating in the cost of the public good production yields the right to access them. The cost of excluding is finite and low, rivalry may arise when crowding or congestion exist: it is prevented by fixing an optimal membership size. Clubs are therefore *local* structures in a non-geographical sense, while Tiébout's "settlements" or towns" are chosen on the basis of the prospective net benefits (public goods provision net of taxes), thus their tax payment buys the right

to (non) exclusion. Produced Public goods are non-excludable for taxpayers, the town residents (thus, *they are geographically local*), non-taxpayers are excluded.

Both types of excluding structures articulate the *social* space but do not solve the non-revelation problem connected with non-rivalry. To members/residents, locally produced and provided PGs while in principle non-rival, the risk of congestion looms. Rivalry moves into the local level, where socially produced services are jointly consumed.

2. The above discussion moves us from a world of *consumers of socially produced final output/externalities*, to the world of the *administrators of socialized production resources*, the dual world of Hardy and Ostrom.

The prediction of the Tragedy of the Commons is founded on the selfish behavior of economic agents, as well as on the non-excludability to an exhaustible finite resource, commons that are treated as *res nullius*, or *open access resources*, OARs. Non exclusion is here the key, being costly (infinitely or else *unfeasible*, just as in public goods, for OARs) or finite but high (so as to make it impractical, in Common Pool Resources, CPRs, as a subset of OARs). In either cases, a degree of rivalry is associated, as high usage (subtraction") may generate degeneration of the resource (resulting in a form of congestion) and a lowering of individual's benefits, depending on the carrying capacity of the *resource system*. Here, congestion does not ignite an *automatic* controlling mechanism, the number of users/the level of individual usage being by definition unrestricted. It has to find other institutional solutions.

The problem was seen (Ostrom) to rest on (the treatment and assumption of) non excludability: CPRs *do have stakeholders*, i.e. formally or informally defined holders of certain rights, therefore "Although tragedies have undoubtedly occurred it is also obvious that for thousands of years people have self-organized to manage common-pool resources, and users often do devise long-term, sustainable institutions for governing these resources (...). An important lesson from the empirical studies of sustainable resources is that more solutions exist than Hardin's state intervention proposed⁴. The notion of CPRs⁵ shifts the attention towards investment and maintenance, and from the short to the long run horizon of the participating agents (thus incorporating sustainability issues). Public Goods are finally recognized as productive resources, and PGs *consumers* have become *producers* with the task of being their custodians for the long run. Historical evidence shows this *bottom up* approach to governance to be not only feasible, but often superior to other governance arrangements.

We are still within a traditional problematic, though, local communities are only shown to be better at solving the collective action problem. Governance continues to occupy the center of the stage.

A new research agenda was born, listing high in its priorities the *redefinition of access as bundle of rights*, and the *identification of structures suitable to solve the collective action problem linked guaranteeing the sustainable use of shared resources*.

At this point of evolution of the economists' reflection, it is natural to look at the production implications of the *fact* that all such non pure public goods are (or can be) production resources. Marrying the theory of NPPGs with the theories of growth and development was the natural accomplishment of various analyses, from local development to those on production/innovation, and the role of technology and knowledge.

ON PUBLIC GOODS AT THE BIRTH OF THE NEO-CLASSICAL THEORY OF GROWTH

Being *exogenous* in an aggregate model (the Neo Classical growth model), Technical Progress (TP) is freely accessible (*non-excludable*) while *naturally* non rival. TP is thus a pure Public Good (Romer, 1993, 1994), perhaps not a surprise given the time coincidence with work on a similar topic, e.g. Samuelson's). As a consequence, growth is viewed as a globally *homogeneous* or standard process, and globalization becomes its corollary. Expectations of cross country convergence, catching up and similar phenomena (on which development theory had dwelled), were naturally raised.

Such *predictions, it is now known, proved to be not substantiated* by the reality of cross country differential growth performance: a hot debated showed that *divergence* (conditional convergence, club convergence, etc.), rather than (unconditional) convergence implied by the NC theory, were the *new stylized facts*, facts though that had been taken for granted and to be explained in the development agenda. Thus, when searching for the drivers of economic performance got seriously under way, Growth theory got closer and eventually merged with Development theory. Still in search of a macro explanation, many things happened to growth theory, among them the reconsideration of the concept of productive capital and of the law of diminishing returns on which Neo-Classical theory rested. For our purposes, though, what is important is that growth theory went from *exogenous* to *endogenous*, and discovered the existence of a variety of growth/development models in a large Empirics of Growth and had to be explained.

Endogenisation of TP has been one type of reaction to those empirical findings. It also satisfied the theoretical demand for an explanation of the growth driver, TP: it was made the result (intentional as a produce, or unintentional acting as an externality) of the profit-seeking activity of production. At the same time, a large literature sprung up on Intellectual Property Rights (IPRs), to explain how to appropriate profit enhancing intellectual production, and finding the reason in the incentive problem.

In both cases, the solution to the problem issuing from the treatment of TP was by moving it from the realm of the pure to that of Non-Pure Public Goods: excludable, though it could not be deprived of non-rivalry. The latter then was converted in the generator of increasing returns to scale: kept at the firms' level, non competitive markets were necessary. On the other hand, the flourishing *growth empirics* led to recognize that

successful development is *basically* an endogenous process, i.e. based on *idiosyncratic* resources, resources that in some sense *belong*; hence, sustained long run development is to be married with sustainability. Development/growth policies became broadly defined *cultural* policies (or better, cultural policy became development policy) aimed at endogenous development and sustainable development became conceived as a *social path*, and not just an environmental solution. Governing such a process with the necessary social support became central.

The new research and policy agenda that was emerging, was pivoting on i) a redefinition of the set of NPPGs as production resources, and ii) a reflection on the connected issues of production organization, value creation and distribution.

THE EXPANDING REALM NPPGS AS GROWTH DRIVERS

Neither the exogenous nor the endogenous explanation of the growth experience proved (to some) satisfactory enough, both sharing the focus on the mechanics of capital accumulation, however defined. Theorists went in search of *deep(-er)* growth *determinants* (a notion due to D. North) and looked at Institutions, Geography, or Culture, automatically accounting for the diversity of the growth experience. The lives of townships and the structured landscapes (of Tiébout), the voluntary associations (of Buchanan), and the communities (of Hardy & Ostrom), all producing a wealth of NPPGs, themselves being NPPGs, exhibit a wide variety. Thus, new production resources were discovered in *Local Public Goods* and *Commons*: resources that *belong* and resources that are *shared*, all of them rooted in a material or virtual location, a human landscape. This realized, *finally*, the marriage of growth/development with the theory of goods/resources, but those *discoveries* are due basically to analysis of *local* development. (Well before, technology itself has been treated as a *club good* to explain convergence of groups of countries, in the works e.g. of Quah and Durlauf.)

Presentation is now organized around two points of entry (a third one being the previous discussion of appropriation of produced knowledge to which I will come back in a while)⁶.

Point of entry A: conceptualizing *resources that belong*:

(*Anthropological*) Culture/Institutions/knowledge and Territory.

1. Culture in the anthropological sense is a community-based *local* NPG for it belongs to a given people. Similarly to a club good, it is the produce of the voluntary association of groups of individuals who identify with it (the theme of cultural identity) and collectively enjoy it. It is *excludable* for individuals not belonging to a given group refer to a distinct identity and are not automatically admitted (current events show): in this sense, culture can be (made) exclusive. On the other hand, Culture differs from a club good in that, *at least in principle*, congestion cannot arise. As a resource, however,

it is *idiosyncratic, non-transferable* (and thus cannot be *transplanted*⁷), *non-reproducible in the short term*. A copious literature shows that how it determines behavior, economic outcomes, and thence growth performance.

Supporting evidence has emerged in a number of settings, perhaps beginning with the debate about the so called East Asian Miracle in which capital accumulation explanations (e.g. Stiglitz, A. Young) confronted Culture/Institutions-based interpretations (focusing e.g. on the role of Confucianism, in the footsteps of Weber and Veblen, Morishima, or the Institutions Wade, etc.). Empirical evidence, on the other hand, led to a reconsideration of Culture and its functions through Social Institutions, it also led to works on the relationship between beliefs/religion and economic outcomes.

2. Culture is conceptualized also as a growth enhancing, *community-specific, hence public capital asset*, i.e.

- *Social capital* features of social organization such as trust, norms of reciprocity and networks of civil engagement⁸ (Coleman, 1990, also Dasgupta and Stiglitz (2000) and extensively used to explain differential economic performance, e.g. by Putnam's (1993) on Italian communities;
- *Appropriate Institutions*, providing the right incentives for investment and innovation, hence growth (a notion originally introduced by D. North, further elaborated by *Acemoglu et al.*);
- *Institutional Capital* (by Ostrom).⁸

3. Culture is seen as a strategic resource in relation to creativity and innovation, the flywheel of economic development, for its capacity of producing new knowledge and on the way to generate novelty and renewal." (Lazzeretti, (2009)

4. Finally, reexamination recognized Knowledge as a complex body comprising both formal (hence, codifiable, costless-ly transmittable) and informal or tacit (hence, non-codifiable) knowledge, the latter being a *sticky* resource that is embedded into a territory and/or to a community. This was the result of evolutionary thinking, beginning the well-known contribution of Nelson and Winter (1982), but going back to the works of Polanyi.

THE HUMANLY STRUCTURED TERRITORY IS THE NEXT LPGS FOR A DISCUSSION WHERE DIFFERENT VIEWS APPEAR.

5. *Territory is a factor for competitive edge in the era of globalization*. In sorting out the manifold relationship between endogenous (sustainable) development and *territorial specificity*, reviewing the industrial district experience as *complex learning systems*, structured so as to respond to an unstable global economic atmosphere. In particular, some such districts (associated with Marshall's analysis) are samples of production

organization feeding and embedded into the social arrangements and thus the cultural capital of a local community. In connection *Territorial Capital* appeared, of which tacit knowledge is a fundamental component.

6. Territory as the *territorial milieu* structured by human life, an essential notion slowly surfacing from the New Geography, the birth of an Evolutionary Approach to Geography, the revival of Regional Economics as “the economics of synergy laden systems of physical and relational assets” (see works of the new Geography, e.g. by Storper and Scott). Such *landscape* is now populated not just by voluntary aggregations, driven by cost benefit calculation, but by *hubs* of human interaction, cities and villages, where *proximity* produces culture and through it innovation.

7. The territory as the site of a social-cultural and natural pact among the three players, community-nature and economic activity, in a *territorial project of auto-sustainability* of the Territorialist School (a notion due to Magnaghi (2010) after Giddes)

Point of entry B: Conceptualizing New (from Old) Commons.

The historic research on *Old Commons* is about Hardy's agenda, the Tragedy, and thus on solving the governance problem, by introducing two distinct elements: restricting access and creating incentives (usually by assigning individual rights to, or shares of, the resource) for users to invest in the resource instead of overexploiting it.

The *New* literature on Commons started from the observation of the inherent contradiction between privatization and increasing interdependence implied by the process of globalization, “Globalization is often associated with increased privateness (...). But it is also — perhaps even quintessentially — about increased publicness — about people's lives becoming more interdependent.” (Kaul, 2003).

Thus, the rise of *New Commons* is reactions to globalization/commodification (Hess, Kaul & Stiglitz). The need has arisen to take *such apparent contradictory dimension* into account, i.e. first of all accommodating new emerging values. *New Commons* are, on the other hand, continuously produced by the New technologies, and by the New Modes of Production that they make possible for people to invent, explore and implement.

Re-inventing the commons leads to a definition

A commons is a resource shared by a group where the resource is vulnerable to enclosure, overuse and social dilemmas, thus the new commons hold the same property (non- excludability) of the old commons, as well as the rivalry property. Unlike a public good, it requires management and protection in order to sustain it.

From the map provided by Hess (2008) to navigate in an archipelago of diverse Commons⁹, two of them, Cultural and Knowledge Commons, are worth being singled

out, as they share the property of being immaterial resources and, like public goods, have infinite carrying capacity.

As for Knowledge Commons, "Since the modern commons' resource is information, the tragedy of the commons has no effect within the knowledge commons — information does not depreciate when being shared with others." Rivalry does not arise, and with it the social dilemma of having free riders around.

Likewise, and again unlike typical common-pool resources, (...), Cultural Commons are non rival in consumption. (...) Nevertheless, being shared by a group of individuals, culture still represents a common resource and at least its provision involves "at least two classes of social dilemma. In addition to the one related with free riding (descending from non-rivalry), there is a second dilemma, that refers to the reproduction of the cultural resource, creating uncertainty in the transmission of the commons to the next generation. The fading of new ideas nurturing the cultural community can make the culture of the commons stationary, or a language can die, an artists community can dissolve."

Cultural and Knowledge commons are produced *and shared*. How is it possible?

ECONOMIES: PRODUCTION AND DISTRIBUTION WITH NPPGS

According our definition, the subset of NPPGs that are *excludable* identifies goods that *belong to somebody*, (i.e. club members, residents of the classical literature; culturally homogeneous groups, human and natural landscapes; cities as hubs of creativity through proximity and exchange). The subset of non-excludable ones, on the other hand, identifies goods that may be *shared* by a group of people, e.g. *stakeholders* whenever certain rights are attributed to them formally or informally (*arable* commons of the basically natural resources collectively managed; grass root institutions for the provision of welfare enhancing services; large knowledge-sharing projects). *They share a social dimension*.

Accordingly, two *economies* can be defined. The *belonging economy* is populated by voluntary and exclusive associations that are *local* in a *virtual* and/or *physical* sense (e.g. parks, territories, culture as above defined; in addition to the settlements and the clubs). Expected benefits are the incentive to join in, public goods are made available only to associates/residents. In the *sharing economy*, *collectively produced* (New Commons) or *collectively maintained* public goods (CPRs: the *arable* Commons) i.e. natural or man-made resources *in given amounts*, are shared by non-exclusive communities, which bear the economic and social burden of their maintenance. Access is open and often promoted, as it solicits voluntary contribution according to one's motivation. This may be not a monetary reward but the *social welfare*.

In the *former* economies, the level of PGs provision is fixed by pooled or available resources. In the *latter* economy, PGs supply is adjusted to demand. In both of them, NPPG resources are exposed to the danger of overuse and deterioration. Correct

sustainable management and maintenance may generate value added that feeds into production and welfare functions. Collective involvement is its necessary condition. In this perspective, one sees Hardin's finite, non-reproducible resource against most NPPGs that are produced, thus in principle reproducible. There is a third alternative to the one advocated by Hardy, with an inbuilt incentive to pursue it (the creation of a surplus) through social collaboration.

The discussion has shown how often voluntary association/local governance solutions perform better than either state or market. Guiding us out of the conventional antinomy, we may consider different economies and production organizations.

Three questions arise, though, not all of them tackled in the literature. Here come our hints for future research.

1. *Are there mechanisms that guarantee such result?* The analysis of such mechanisms was Ostrom's own contribution, but it is not clear how far one can generalize it.

2. As NPPGs are not simply consumer goods, but often inputs in production processes, *how is their contribution* (the value added mentioned above) *accounted for?* That's why and when they act as growth drivers: growth drivers are those that (contribute to) create value. Remember: exogenous TP produces value sustaining long term growth but, being a Pure Public Good, it need not be remunerated. Intentionally produced TP (and generally knowledge) made exclusive through intellectual property rights, generates an extra income that accrues naturally to the holders of the patents. How do we go about now, with NPPGs resources that are neither one?

3. *What are the principle of this redistribution* when resources are collectively owned?

It is useful to recall that such bundle of issues arose out of extensive empirical research. Their development has been, finally, recognized as a fundamentally *local* process with certain triggering and sustaining mechanisms, pivoting on Non Private Goods.

Such conceptual origin yields some hints to answer them.

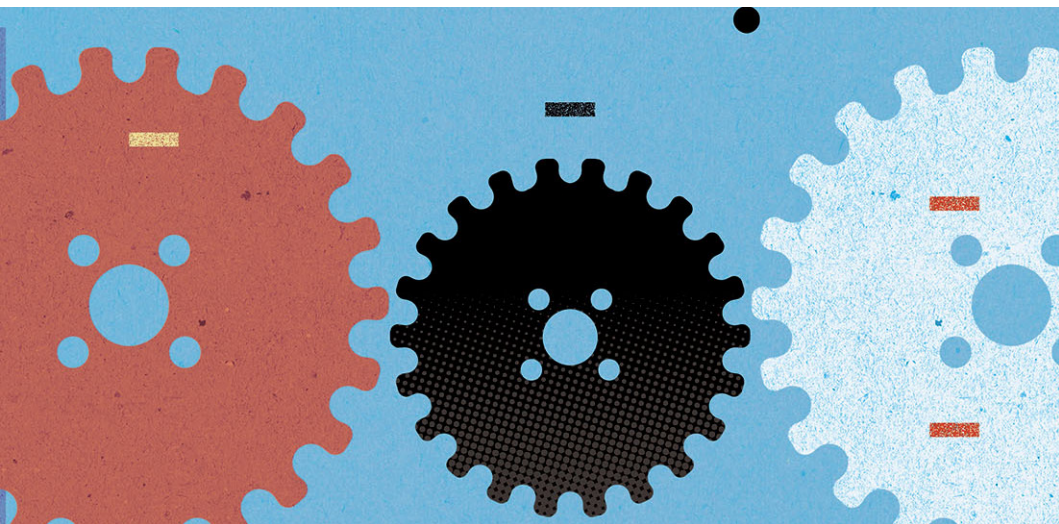
1. All NPPGs share the property of non-rivalry within the limits set by the possible congestion. Theory wants that such non rivalry lead to their under production or non production, thus supplying the ground to justify the (second) enclosure movement currently going on (Boyle, 2003). Instead, reality of the NPPGs economies shows that their production can take place and that it often relies on novel collaborative forms of organization, the realm of NPPGs being continuously expanded through these forms of organization. *In the case of knowledge, it is often based on a (networked) peer system that is neither firm- nor market-like: it has a decentralized structure where incentives do not come from appropriability.*¹⁰ *The peer commons-based production is an alternative (the third model) to Coase's antinomy, something similar to the gifts exchange of certain anthropological research* (Benkler, 2002).

2. Non-excludability of the Commons has directed privileged attention to issues of governance (clubs and settlement solving it implicitly), and therefore towards the organization of production. But production raises another question as both people and resources are involved: if NPPGs are productive resources should they be remunerated and in case how? Dual to the contribution problem related with the free riding behavior in consumption, there is, in production, a distribution problem to resource stakeholders. In more traditional terms, often but not with all PPGs!, the latter can be conceptualized in terms of externalities that some such resources generate to the whole production system. It does not seem that all NPPGs' effects can be accommodated in this notion. Thus, if such a concept cannot be generalized, the solution is far from clear.

3. But, first, what is the nature of the contribution of NPPGs (the topic picked up in Kasliwal (2016).

It can only be a *generalized* form of *rent* for it is generated by production resources being immobile, specific, and non-reproducible, at least in the short term. Thus, they are resources *that* in some sense are *rooted and*, though they are not private, they socially *belong*. This fact is often synthesized by talking of territorial or cultural value added, which would have economic value though it is not produced by individual efforts.

Before being able to extract it, in a situation where there are by definition no property rights on the basis of which to claim extraction, such contribution has to be economically recognized and factored into the price of final output, and those entitled to a share have to be identified, too. One may call the former, *valorization (in fact, it is often value generation)*, for which some mechanism has to be put in place (often with the intervention of UNESCO, and tourism): final output price has to be higher than the sum of private inputs contributions, however computed. The latter is one more complicated story: *How can one own what by definition cannot be owned* (Hess, 2008).



Two approaches (the easiest) are generally implemented:

- Expropriation of the rent generating resource, i.e. making it private. Extraction and entitlement identification are solved at once. This transforms the resource whose services contribute to a society's production to what is called a *firm augmenting resource*. This generates to the new owner, under various headings, monopolistic or extra profits, royalties etc. It is the most common solution, not always possible and often not the best, socially speaking.
- State control via ownership *and* licensing, or taxation that skims the rent (partially or totally) of private firms revenues, and hopefully returns it later on to community.

We have to count on a benevolent state with redistributive policies for in either case, the rent recognized the surplus in a socialized production.

BY WAY OF CONCLUDING

Culture, Knowledge, Institutions, Territory have attracted the economists' attention in recent years, while looking for the "fundamental (*North's*) explanations" of differential economic performance. They all have been seen for what they are: some pure public goods, some Commons, some of the Club-type. As Boyle's students say, cultural and scientific Commons are all over the places. They all share a second relevant aspect: they are *complex* goods. E.g. social norms do not come alone, isolated from the context of accepted social behavior. Institutions span a structure. Knowledge is a body, etc.

The view for the sustainability of development, through the care of these "fundamental drivers", further highlights this latter aspect. Thus, even when we talk of natural resources as *Physical Commons*, they appear to be strongly interconnected in wholes, *structured landscapes*: each counts as an individual resource, *and* as a component of the local environment. Ostrom did the first step in their treatment, recognizing many of them as Commons; Robert Ware did (with others, e.g. Stiglitz and Mazzucato) the next, the recognition of their deep interrelation.

It should be clear, at this point of reading, that most of my previous argument serves a twofold purpose: first, to review a growing literature in its logico-historical evolution only in order to identify problems and unsolved issues. There are many, and I am not going to resume and make a list of them. The bottom line of this argument is that public goods, one for being a large and expanding variety, next for being diverse with also diverse origins, are still relatively or little understood by the economists.

Perhaps, this has contributed to the fact that only recently they have received due attention. But once "discovered", i.e. once a *Pandora*-like lid has been lifted, it cannot be put down again to hide the story. Lots of issues emerge to the surface and have to be dealt with, some of them have been considered above, more are on the table before our eyes.

The difficulties with all kinds of public goods have been tried to be solved by “privatizing them”: in other words, by trying to make for them some of those *missing* markets. I do not want to enter an assessment of what has been the success of this attempt, but of course we all know that markets are *per se* imperfect allocational mechanisms (wealth distribution of the recent years has made this evident). This is increasingly perceived by the public at large, who as a result is seeking for alternative solutions.

The above discourse is more the announcement of the tentative lines of a research project than a fully blown, mature reflection. Thus, its key message, if any, is that non-market goods are all over our economic life *and* that they do make it possible. Markets are only one of the solutions mankind has invented to deal with the distribution of goods and services. It is not the unique one solution nor it has been, historically. But, perhaps, neither they have to be the unique model solution for our future.

Notes

¹“When Samuelson took up the concept in the 1950s, economists and the world at large favored an active role for the state in the economy (...). Keynesian macroeconomics and Pigouvian welfare economics were basic to the paradigm, and many countries practiced planning and state control of the economy. Thus it was in a way natural to presume a large role for the state in the provision of public goods. Such a role was a response to a presumed preference on the part of the public for public goods.” (Desai, in Kaul, 2003)

²“There are goods that are inherently public *by design*. (...) A third type (...), there are goods that are *public by default*, either due to lack of foresight or knowledge in the design.” (Kaul *et al.* (2003)).

³The possibility of overcoming the inefficiencies from externalities through bargaining among affected parties was first discussed by R. Coase in “The Problem of Social Cost” (1960).

⁴“The possibility of producing “order without law” and, thus, sometimes governing the commons without tragedy, has also fascinated scholars of contemporary land use. R. C. Ellickson (1991): “The prediction that resource users are led inevitably to destroy CPRs is based on a model that assumes all individuals are selfish, norm-free, and maximizers of short-run results. This model explains why market institutions facilitate an efficient allocation of private goods and services, and it is strongly supported by empirical data from open, competitive markets in industrial societies (...). However, predictions based on this model are not supported in field research or in laboratory experiments in which individuals face a public good or CPR problem and are able to communicate, sanction one another, or make new rules (21).” (Ostrom (1991, p.20; see also Ostrom, 2003).

⁵“...to refer to resource systems regardless of the property rights involved. CPRs include natural and human-constructed resources in which (i) exclusion of beneficiaries through physical and institutional means is especially costly, and (ii) exploitation by one user reduces resource availability for others (Ostrom, 1991, p. 13)

⁶To make more *concrete* our presentation, we will introduce some references to an extensive literature, without in any sense these being exhaustive.

⁷That Culture could not be transplanted, led to a revision of the development approach.

⁸In (...) Putnam’s *et al.* (1993) emphasis is on one form of social capital, civic participation. Strong traditions of civic engagement are the hallmarks of social cohesion and, in turn, economic progress, argues Putnam. Elinor Ostrom (1990), equates social capital with the richness of social organization. She emphasizes institutional capital, defined as the supply of organizational ability and social structures, literally the “capital” of institutions that a society has at its disposal.

⁹New commons (NC) are various types of shared resources that have recently evolved or have been recognized as commons. They are commons without pre-existing rules or clear institutional arrangements. (...) Tackling new commons over several years has demonstrated that this vast arena is inhabited by heterogeneous groups from divergent disciplines, political interests, and geographical regions that are increasingly finding the term “commons” crucial in addressing issues of social dilemmas, degradation, and sustainability of a wide variety of shared resources. The resource sectors include scientific knowledge,

voluntary associations, climate change, community gardens, Wikipedias, cultural treasures, plant seeds, and the electromagnetic spectrum. All of these new resource sectors and communities require rigorous study and analysis in order to better grasp the institutional nature of these beasts. (Hess, 2008).

¹⁰ Thus, "A new model of production has taken root, one that should not be there (...) which reveals its superiority in terms of information circulation and in particular (human) resources allocation, effectively dealing with situations where the process can be fragmented and a number of people can contribute marginally with a variety of motivations". Benkler (2002)

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