

Economics of Post-Growth Planning:

Cooperation and Altruism

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Abstract

Post-growth Planning is an intellectual agenda explicitly developed in antithesis to the paradigm of economic growth. Cooperation and Altruism are themes of economic research in antithesis to the paradigm of market-based economic relations and selfishness. Can fruitful dialogues happen between the two fields? Can the more established latter inform the fast-growing former? Can formal and rigorous economics assist post-growth planning scholars? This article addresses those questions.

Issues around environmental sustainability, urban commons and common good are intrinsically related to cooperation and altruism at the micro and at the macro level: i.e. individually, altruistic behaviour is different from the one of the selfish *homo economicus*, and in the aggregate, altruism can translate into a social norm of cooperation for the common good. By exploring these links, I discuss how theoretical findings on altruism and cooperation can be used to frame post-growth planning agendas.

1. Introduction

Post-growth Planning is an intellectual agenda explicitly developed in antithesis to the paradigm of economic growth (Savini et al. 2022). The *Economics of Giving, Altruism and Reciprocity* are themes of economic research in antithesis to the paradigm of market-based economic relations and selfishness (Kolm and Ythier 2006). Can fruitful dialogues happen between the two fields? Can the more established latter inform the fast-growing former? Can formal and rigorous economics assist post-growth planning scholars? This article addresses those questions.

Both approaches are based on different premises from those of *neoclassical economics*¹ in at least two fundamental dimensions:

1) at the individual (micro) level, *true* human preferences are not those of the *homo economicus*, i.e. a selfish economic agent solely interested in the maximization of personal utility;

2) at the aggregate (macro) level, competitive market outcomes are not always desirable.

The fact that 1) is a criticism of individual behavioural assumptions and 2) is a criticism of an aggregate outcome which is theoretically consistent with the assumptions criticised by 1) clearly poses methodological challenges as well as opportunities.

In short, since the assumption of *homo-economicus* is primarily motivated by the need of a tractable analysis from the individual to the aggregate, any economic analysis departing from such individual assumptions would find much more challenging to precisely determine aggregate outcomes. Conversely, a rigorous analysis of aggregate outcomes that are external to the realm of competitive markets would typically require to look beyond individual rationality in the marketplace.

The ‘natural’ advantage -and intellectual contribution- of economics is to address such methodological challenges by starting from individual choices to analyse aggregate and societal outcomes. How economics can inform and help post-growth planning by taking seriously the links between individual choices and aggregate outcomes is the *fil rouge* that this article follows.

In the rest of this introductory section, I briefly point to comprehensive reviews of fields and strands of economics where the said link between non-selfish individual preferences and aggregate outcomes has been taken seriously. What many of those economic research fields have also in common

¹ Neoclassical economics will be defined precisely in Section 2.

is an explicit -or sometimes implicit- interest in cooperation towards the *common good*, a theme very dear to post-growth planning as we shall see.

Kolm and Ythier (2006) document that the economic literature has a long history of research on how altruistic behaviour can be generated from self-interested motivations in iterated games or in reputation-building, both theoretically and empirically. For example, it is well known that selfish preferences are still compatible with costly contributions to public goods, cooperation in games, or altruism towards family members. In addition, behavioural economic research has investigated how altruistic acts may be caused by the emotions of the agents, notably pride and shame. As discussed by Ester (2006), an important distinction drawn by the literature is between acts whose performance is conditional on seeing what other agents are doing, corresponding to quasi-moral norms of fairness or reciprocity, and acts whose performance is conditional on being observed by other agents, corresponding to social norms. Ester (2006) also shows that most of these ideas can be traced back to philosophers such as Montaigne, Descartes, Pascal, Hume and Kant. Another important line of thought which intersects the work on motivations behind altruistic behaviour, cooperation and norms, is the work on reciprocity; Hann (2006) analyses the anthropological differences between disinterested gifting, altruism and reciprocity.

More generally, behavioural economics² is looking beyond selfish, consistent and un-relational preferences; research on happiness investigates broader dimensions of individual preferences and outcomes than those typically studied in economics³; the long history of research on social choice and welfare -especially the capabilities-based approach⁴- offers many insights on the link between individual incentives and aggregate outcomes related to the common good.

The next section will explore various post-growth concepts that relate to a desirable societal shift towards cooperation and care. Therefore, this brief review is concluded by mentioning specific economic approaches on which is based the analysis to be developed in the next sections. Gabrieli (2021) discusses the economic literature on altruism and cooperation that is related to the anthropology of Catholic social encyclicals which have a strong emphasis on the common good. Among those works, Bruni (2008) analyses how cooperation can be evolutionary stable as long as there are few “good Samaritans” who cooperate unconditionally, even if the majority of people only cooperate conditionally and some might not cooperate. Another related economic analysis of altruism as a social norm is the relational approach

² See Bernheim et al. (2018) for an introduction.

³ See Bruni and Porta (2007) for a review.

⁴ See Kaushik and Lòpez-Calva (2011) for a comprehensive review.

reviewed by Sacco et al. (2006), where the human need for relationships is a motive for individual reciprocity and altruism, and environments where relations exist can be fertile ground for altruism and cooperation to become a social norm. Finally, in order to shed light on the vast field of the economics of care, Nelson et al. (2023) discuss differences between *Female, Feminist, and Feminine Economics*.

The remaining of this article is organised as follows. The next section is a discursive analysis on how economics can be “re-built from the inside” in order to offer analytical tools to post-growth planning; in particular it explores two core domains of post-growth planning: the commons and the common good. Sections 3 and 4 are more technical and use simple examples from game theory to respectively analyse individual choices and collective rules in the post-growth domains identified in section 2. Section 5 discusses the core results and their implications for the post-growth planning agenda.

2. Planning for the commons and for the common good

Can post-growth planning benefit from an economic analysis? Is an economic analysis at all possible in the post-growth context? This section explores those questions.

Any rigorous economic analysis needs to start from the fundamentals of an economy: people, their actions and motives, goods and services, institutions and institutional rules. In order to do so, typically any economic analysis starts from the individual behaviour (the micro) to understand aggregate economic outcomes (the macro). Traditionally, microeconomic theory starts from very general and abstract “fundamentals”⁵: each individual is described by *rational* preferences⁶ over pairs of alternatives, preferences can then be translated into an objective (happiness/utility) function, and individual problems of choice, i.e. whether to choose A over B, can then be solved by optimization.

In (microeconomic) theory any choice problem could be -and has virtually been- represented and analysed: not only consumption choices⁷, or choices in the market domain, but also social, political, emotional choices and

⁵ See for example the introduction of Mas-Colell et al. (1995), the main Microeconomics textbook that is adopted in most graduate program in economics.

⁶ Rational is intended as complete (one either prefers A to B, B to A, or is indifferent between the two) and transitive (if one prefers A to B and C to B, then must prefer C to A), and such rational axiom can in fact be used to study irrational choices (see for example Elster 1979) in or Kahneman and Tversky (1984) as seminal studies that inspired the field of Behavioural Economics.

⁷ Consumption choices could be about anything: how many apples and/or oranges to buy, how much time to spend on sleeping, doing charity work, or searching for the best insurance, or how much time to spend with children versus colleagues.

behaviours. The only condition is for the problem to be tractable: preferences over goods need to be well defined and there must be “relative prices” describing how much more happiness an additional unit of good A would give as compared to a unit of good B. Given limited resources, choices typically imply trade-offs.

Despite the potential generality of microeconomic theory, the “marginalist revolution”, consequently known as neoclassical economics and initiated independently by the works of William Stanley Jevons, Carl Menger and Léon Walras in the 1870’s, developed a microeconomic theory of market exchanges of commodities (goods and services) traded at given market prices. Further developments of such framework by modelling individual preferences that are not only rational, but also selfish and insatiable, allowed the research program on General Equilibrium Theory to succeed in the mathematical proof of the existence and Pareto efficiency of a competitive market equilibrium in the 1950’s; a result long sought after and easily interpreted by market libertarians as a proof of the *invisible hand* of Adam Smith.⁸ Since this seminal result, the focus on free markets and the behavioural assumptions of the homo-economicus have become widespread and mainstream features of economics under the label of neoclassical economics. As discussed in the previous section, however, research in economics that is based on different assumptions and scope has always developed in parallel and since the “behavioral economics revolution” of the late 1990’s economics is increasingly less limited to the neoclassical paradigm; as mentioned, there are contribution of economics on virtually every theme that is dear to post-growth thinking, even if not criticising economic growth. It is therefore important to look at these common themes. In an attempt to “re-build” an economics for a post-growth analysis, we start such investigation from the most evident criticism of post-growth planning to economics.

Common Good

Savini et al. (2022, p. 7) advocate ‘alternative ways of organising socio-economic relations to aim to promote a move away from individualist materialism and instead promote conviviality and meaningful social relations of reciprocity’. From definitions like this, it is evident that the anthropology of post-growth planning clearly criticises the framework and assumptions of neoclassical economics with respect to all the basic ingredients. For example, individual utility is a contested concept: individuals are not meant to maximize material consumption but to strive for *Buen Vivir*; individuals are

⁸ See Attar and Mariotti (2020) for a very “contemporary” discussion on why this result was very important also for those interested in a planned economy.

not conceptualized as selfish economic agents but citizens in need of reciprocal care; individuals do not act and choose in isolation but are influenced by societal ties/ structures. Most of economic research contributions across themes of giving, altruism and reciprocity would be consistent with those statements and provide an analytical framework to study such issues.

Moving from the anthropological foundations to the policy conclusions, a post-growth approach ‘urges policymakers to shift the focus from the expansion of the economy toward the quality of socioeconomic relations, to invest directly in well-being and reduction of environmentally harmful activities, and to tackle the climate crisis at its root’ (Savini, 2024). From definitions like this one we can further infer that the aggregate object of post-growth planning is not an aggregate of individual utilities but a concept of common good.

A basic lesson from economics is that aiming towards the common good does not necessarily mean that everyone’s personal utility will be higher or not even that no-one will be worse off. Savini (2024) explains that post-growth is ‘an intellectual agenda without a toolkit’, there are different approaches that rely on different policy tools and have different (re)distributional implications. Degrowth is the approach that explicitly calls for a program of ‘redistribution of wealth’ and ‘regenerative designs’. There are at least three general lessons from economics about redistribution: due to the distortive effect of redistribution on individual incentives there may be a trade-off between the level of redistribution and the extent of resources to redistribute⁹; societal beliefs about the optimal level of redistribution may be self-fulfilling¹⁰; the relationship between prevailing redistribution, inequality and social mobility is typically not well-defined¹¹. Given those fundamental economic complexities related to a specific analysis of optimal redistribution, it is natural that the domain of post-growth planning relates more to the regenerative design of cities, which is closely related to the concept of urban commons.

Commons

Another criticism of post-growth thinking towards economics is about the sole focus on private property, and therefore private goods. Savini (2021) states that ‘an axiom in neoclassic economics, scarcity has been portrayed as the necessary condition of pricing goods positively and the ethical justification of

⁹ See for example Meltzer and Richard (1981).

¹⁰ See Piketty (1995) and Alesina and Angeletos (2005).

¹¹ See for example Benabou (2000).

private property'. Scarcity is an axiom of economics because any economic problem is a problem of limited resources, but by looking to commons beyond private goods economics can turn into a powerful ally of post-growth planning.

Bruni (2023) offers a simple economic framework to analyse commons, which I follow throughout this article. As a starting point he discusses that the third millennium will be the 'era of the commons'. Even if the main focus of neoclassical economics has been on private goods, Bruni (2023) argues that the economic and social goods that are now decisive for the quality and perhaps survival of life on earth are goods that many, if not all, use jointly, such as air, water, and a habitable Earth.

In a similar spirit, the literature on post-growth planning shares the belief that commons, and in particular urban commons, are a key issue to improve societal welfare. In general 'degrowth requires recognition by policymakers of the fact that overconsumption by the wealthy is damaging the urban and planetary commons for all' (Savini, 2024). More specifically, Savini (2021) argues the centrality of urban commons for degrowth policies, and in fact for 'the need to govern the city as a commons'. De Angelis (2022) argues that 'city commons should be seen as an emergent system for coordinating social reproduction in its fullest form'. Those holistic views of the commons in post-growth discourses resonate with Bruni (2023) that includes in the commons 'the management of a condominium' but also 'coexistence in multi-ethnic cities'.

Public Goods before Commons

Following Bruni (2023), in order to grasp their main features, it is useful to recount the historical path over which commons entered the domain of economics. Samuelson (1954) wrote a ground-breaking paper that allowed the theme of public goods to enter neoclassical economics. He discussed that a public good has two key characteristics: it is non-excludable and non-rivalrous. These characteristics imply that anyone uses the same amount regardless of how much they individually appreciate it. Therefore, for a hypothetical market producer it would not be possible to know if the price that each citizen pays for the use of the public good is efficient and if the quantity of public goods offered is optimal, hence there is a 'market failure'.

For the same reasons, even if it is the state that produces these public goods, there is no guarantee that the taxes to finance those public goods are efficient. This theoretical result well represents the scepticism implied by the neoclassical economic framework about the role of state versus the market as a provider of goods, and its libertarian implications. On the other hand, the foundational framework of Samuelson (1954) inspired an entire new field of

economics focusing on public goods and nowadays *public economics* overlaps with many themes that we mentioned in the introduction.

Foundational results on public goods provision are still very relevant for current policy debates. For example, on the basis that social housing is a public good, many suggest its large expansion in London, or other major cities, where the market does not provide affordable and quality private housing to many; but what is the optimal quantity to provide and the optimal level of taxation to pay for it? Social housing, like any housing, is clearly excludable and therefore not strictly a public good. This suggests that it may be more economically efficient to use a market-based solution, i.e. to use a system of universal income or grants to enable everyone to pay for a decent home offered by the market. Notwithstanding the public financial cost, inefficiencies in the housing market that I will discuss next make any market-based solution tricky.¹² An answer may come if we conceptualize housing affordability and decent housing standards as commons.

The concept of commons was popularised by the biologist Hardin (1968) in a theoretical article that was certainly inspired by and consistent with the rational approach of neoclassical economics. The theoretical centre of his famous article is based on an intuition of the English political economist Lloyd (1832)¹³. In an Oxford lecture of Malthusian inspiration, Lloyd included a hypothetical example of cattle herders over-using a common parcel of land on which they were each entitled to let their cows graze. ‘Why is the common itself so bare-worn, and cropped so differently from the adjoining inclosures?’ He postulated that while on a private field there is ‘a point of saturation, beyond which no prudent man will add to his stock’, i.e. the individual optimal choice in the utility-based language of Hardin (1968), on a common, for each additional cow, a herder could receive an additional private benefit, while the resulting damage to the land would be a social cost shared by everyone. Hardin (1968) formalized that for rational agents the individual benefit of increasing the use of the common good is greater than the individual cost, hence the individual incentive to use the common up to its tragic destruction. Like Lloyd and Malthus before him, he was primarily focused on the problem of overpopulation, but his article also focused on the use of finite resources and pollution, as well as the dangers of freedom with individuals acting in rational self-interest. Despite the negative message on individual freedom and distrust in individual self-interest, the contribution of Hardin (1968) brought commons in the interest of economics.

¹² See Worstall (2013) for an example of the debate on social housing as a public good.

¹³ Hardin (1985) also quotes Aristotele: ‘That which is common to the greatest number gets the least amount of care. Men pay most attention to what is their own: they care less for what is common’.

A natural response of neoclassical economics to the *tragedy of the commons* was to argue for the creation of clear property rights alongside the framework of Coase (1960). Ostrom (1990) brought instead the attention to locally designed institutions and rules by showing many examples in which communities self-organized to manage common resources effectively.

The discussion that we have followed so far leads us to conceptualize the object of post-growth planning as a political-economic system where commons are well-managed in the interest of the common good. It also explains that individual decisions based on self-interest do not imply the best use of commons and therefore do not help a society or community to achieve the desired common good. Solutions based on property rights do not seem implementable for many environmental commons that are key to societies today, for example the quality of air. This brings the discussion of possible solutions towards the themes of altruism/cooperation mentioned in the introduction, which are key to the contribution of Ostrom (1990). We can now consider more specifically three fundamental post-growth planning objectives; this will help to achieve a more specific discussion of possible solutions.

Reduction of environmentally harmful activities

Within the wide discourse on environmentally sustainable futures, post-growth planning is explicitly calling for a ‘substantial reduction in consumption of natural resources’ and ‘scraping unsustainable lifestyles’ (Savini et al. 2022).

Employing and re-building an economic framework to analyse this planning object implies to model the individual decision to consume less and pollute less. What could then be motives and incentives towards such virtuous choice? Not surprisingly post-growth planning has thought about the same broad categories that have been discussed across the economics of giving, altruism and reciprocity. One is personal ethics, i.e. human moral obligations affecting individual choice, as discussed for example by Arler (2006). The other is institutional constraints to individual freedom, i.e. rules, regulations and laws limiting individual choices; for example, banning or taxing environmentally harmful activities like car or airplane use.

As reviewed in the introduction, a vast literature has studied how the two categories interact in all sorts of complex ways; the challenge for post growth planning is to understand the links between individual decisions and desired aggregate outcomes in specific contexts. How and when do virtuous choices become social norms? Which institutional constraints produce the most

virtuous behaviours and aggregate outcomes? Or which ones do crowd-out individual incentives with unintended consequences?

Broadly speaking, any policy solution needs to address issues of *cost-shifting*, i.e. *externalities* in the language of economics: situations in which ‘(economic) agents generate social costs (financial or otherwise) that affect, whether directly or indirectly, third persons or the environment’ (Conde et al. 2022). Given our discussion so far, in general solutions to those known issues go back to Pigou (1920) (tax and subsidies to internalize the cost), Coase (1960) (create property rights), or, more specifically on commons, Hardin (1968) (limit individual freedom) and Ostrom (1990) (facilitate self-organized communities to manage common resources effectively).

De-commodification of housing.

Post-growth planning is highly critical of housing being predominantly a private good exchanged in a market economy. Among others, Savini and Bossuyt (2022) discuss the ‘commodification of housing’ as a central feature of a ‘growth-boosting market’, in anthesis with goals of environmental sustainability¹⁴ and *Buen Vivir*.

A vast literature in economics has studied housing as a non-standard private good, because of its lumpiness, intrinsic values, and spatial features among other factors. The market equilibrium with housing is typically not efficient nor equitable because of those features¹⁵. The “Four Quadrants Model” of DiPasquale and Wheaton (1992) is a useful general equilibrium tool to understand how the interaction between development and investment naturally creates market dynamics, volatility and cycles; it can explain the dynamics of *financialization* discussed by Ryan-Collins et al. (2017): strong demand for housing as an investment asset and limited supply creates shortages, unaffordability, and inequities. Ryan-Collins et al. (2017) also discuss that land value capture and land-based taxation have been extensively seen as solutions to those fundamental issues.

Hill and Mazzucato (2024) discuss new strategies for a ‘re-commoning of domestic spaces’. In financialized cities with ‘many houses that lie unoccupied’ and ‘extremely wasteful in terms of living spaces or operational performance’ rather than continuing to focus on the supply-side they suggest to think about the challenging question of how to distribute the existing space, with ‘old houses becoming new homes’ and ‘empty rooms becoming occupied’. Similarly, Savini and Bossuyt (2022) discuss co-living, co-ownership, and eco-

¹⁴ See for example zu Ermgassen et al. (2022).

¹⁵ See for example Keogh and D’Arcy (1999).

housing as alternatives to the individualist approach to housing and as elements of a culture of sufficiency and care.

From the post-growth literature, it therefore emerges that in the context of housing, individual virtuous decisions are then to invest time and resources on creating and sustaining de-commodified ways of living, as well as favour those to traditional private housing. In this context, the challenge to understand the nature of individual incentives, and their link with the desired aggregate outcomes, appears to have even more layers of complexities than in the context of environmentally harmful consumption.

Buen Vivir

Savini et al. (2022) discuss that post-growth planning shifts the goal of development away from growth, promoting a ‘non-materialistic and non-consumerist quality of life’. Post-growth is openly critical of consumerism and argues that ‘people can live meaningfully and happily by maintaining a minimally sufficient material living standard’, ‘in exchange for more time and freedom to pursue non-materialistic and non-consumerist sources of satisfaction and meaning’.

As mentioned in the introduction, those themes strongly relate to concepts of altruism, cooperation, and social norms that have long been in the domain of economics. Economics shows that a tractable analysis of individual decisions in the domain of leisure¹⁶, or of the links between individual decisions and societal morals¹⁷ is not easy task, but for sure one that has already been undertaken and whose results can already inform future research.

Figure 1 offers a summary of our analysis so far. We discussed that post-growth planning objectives can be understood as means to implement overarching aims of common good. We also discussed specific lessons from the analysis of the properties of the commons; lessons explore the links between individual decisions and aggregate outcomes, given collective rules and regulations; research in economics addresses the complexity of those mutual links for the optimal design of rules and regulations. In general, policy ideas and proposals related to post-growth planning can be conceptualized at the intersection of these broad aims and general lessons. It is a broad and general framework, a theoretical first step towards a more specific analysis of policy proposals for future research.

¹⁶ See for example Veal (2006).

¹⁷ See for example Benabou and Tirole (2016) and Ghosal (2024).

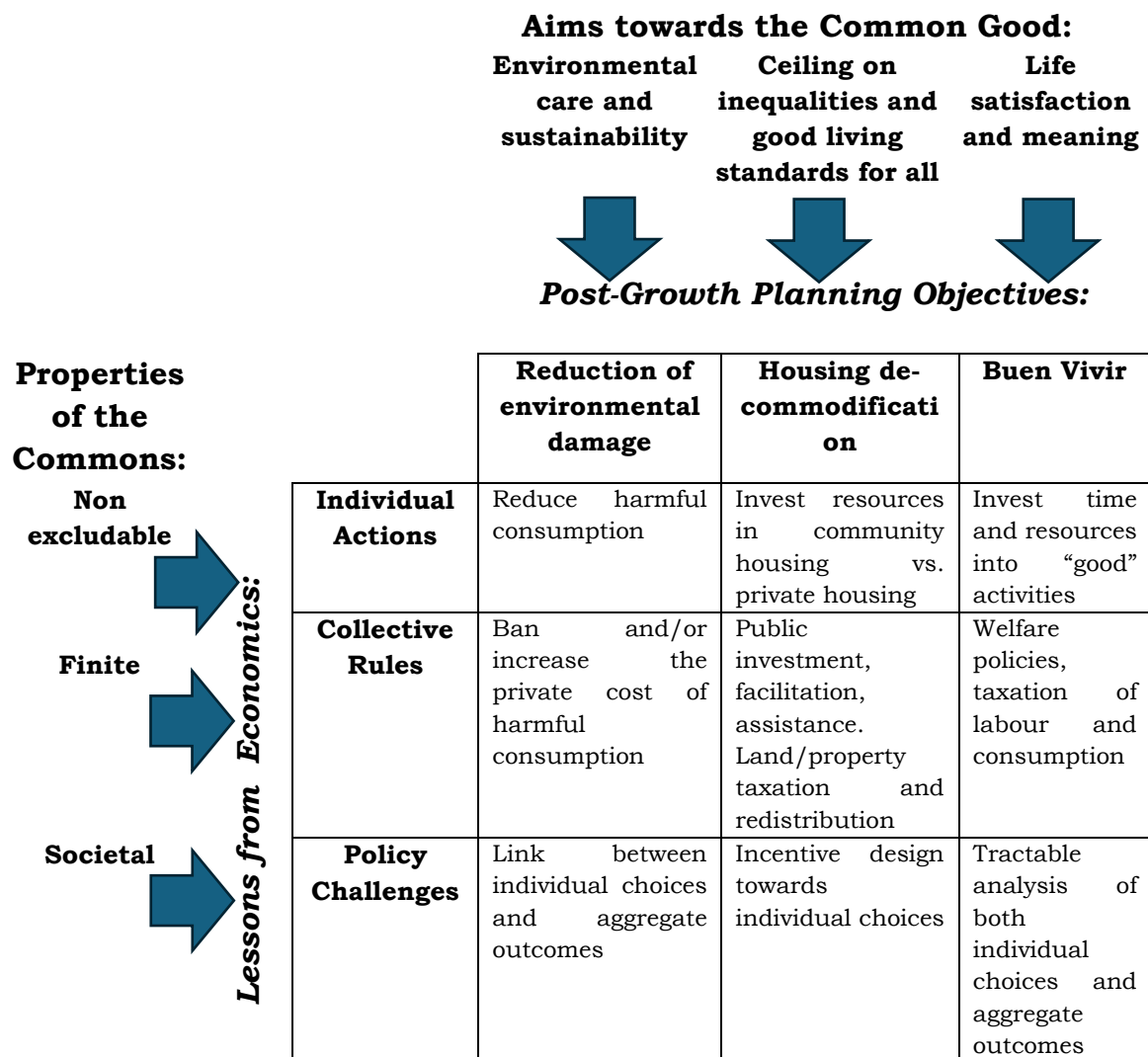


Figure 1: An analytical framework for Post-Growth Planning

3. Individual decisions and collective outcomes

Following Bruni (2023), and more generally Ostrom (1990), in this section I refer to fundamental ideas of game theory to illustrate how individual decisions can translate or not into a cooperative outcome that achieves the common good.

Economists showed that the tragedy of the commons analysed by Hardin (1968) was, in essence, a *prisoner’s dilemma*: there is a rational strategy for the individual to maximize his utility, but if all other rational agents follow the same strategy it produces inefficient results both collectively and individually.

The prisoner's dilemma is a thought experiment where two members of a criminal gang are arrested and imprisoned.¹⁸ They are in solitary confinement with no means of communication and the police offers each prisoner a Faustian bargain: to testify against their partner and go free, or to remain silent and be jailed. If both testify against each other they both serve jail, but for a longer term than if they stay silent. The dilemma highlights the tension between individual self-interest and collective benefit. Each agent would be better off if both stayed silent, but self-interest makes this cooperative outcome impossible.

		2. Clyde	
		Confess	Deny
1. Bonnie	Confess	2, <u>2</u>	<u>4</u> , 1
	Deny	1, <u>4</u>	3, 3

Figure 2: Example of a prisoner's dilemma

Figure 2 illustrates the typical structure of a prisoner's dilemma, from which we can understand the fundamental ingredients of game theory that we can then apply to post-growth issues. A game is specified by players, actions, strategies, and pay-offs. In this game each player can choose between two actions. A strategy is defined as a complete plan of actions, in other words the action to play, given each possible action of the other player. Hence each player needs to choose one from each pair of *pure* strategies: confess if the other confesses or deny if the other confesses; confess if the other denies or deny if the other denies.¹⁹ The chosen actions determine the outcome of the game and therefore the individual pay-offs; in each cell the first number corresponds to the pay-off of player 1 and vice-versa. An individual rational strategy is the one that maximizes the individual pay-off; the rational strategy is therefore obtained as a *best response*, i.e. the action that maximizes the individual pay-off given the action of the other. In this game, the best response is to always confess. If a player confesses, for the other player confessing is better because 2 is better than 1. If a player denies, for the other player

¹⁸ Originally presented by Merrill Flood and Melvin Dresher in 1950, while they worked at the RAND Corporation.

¹⁹ We do not need to explore the more complex concept of *mixed* strategies: strategies where a player randomizes between different actions with specified probabilities. The ground-breaking contribution of Nash (1950) -for which he was later awarded the prestigious Nobel prize in economics- was to conceptualize mixed strategies and to show that an equilibrium always exists with mixed strategies. The contribution was instrumental for the development of neoclassical economics because the mathematical framework of Nash (1950) opened the way for proving the existence of a General Equilibrium.

confessing is better because 4 is better than 3. Given each action of one player, we underline the payoff given by the best response for the other player. A Nash Equilibrium is defined as a situation in which each player is playing a best response to the action of the other, in other words no player has an incentive to change strategy. A cell where both payoffs are underlined is therefore a Nash Equilibrium. In this game the only equilibrium is when both players confess and it is inefficient; both of them would be better off if they could coordinate and deny.

This framework can be easily applied to the post-growth planning objectives analysed in the previous section. Any virtuous individual choice can be understood as an action contributing to the common good versus an action against it: pollute less or more, support or not community housing, choose or not a consumeristic lifestyle. This approach may appear too reductive, but such simplification is possible because the many complexities that lie behind have been extensively discussed in the previous section. The game in figure 3 presents the same payoffs as the one in figure 2, but with a very different story behind. It describes the potential gain that different citizens, for example a teacher earning a modest wage or a wealthy banker, would receive from virtuous (i.e. post-growth) or non-virtuous (i.e. pro-growth) choices. Obviously, the complex story that any game can represent in a simplified manner is entirely dependent on the structure of the payoffs. In the case of the game in figure 3, for any citizen the virtuous choice is more costly than the non-virtuous, and there is no individual incentive in being virtuous. As discussed by the reviewed literature in economics, endless problems of low contributions to public goods or un-optimal use of commons arise from the individual incentive to act in a self-interested manner. The first result that we obtain from this game-theoretical framework -perhaps not very surprisingly- is therefore that post-growth common good outcomes are unlikely to happen if the individual incentive is to act in a self-interested way.

		2. Banker	
		Non-Virtuous	Virtuous (post-growth)
1. Teacher	Non-Virtuous	2, <u>2</u>	<u>4</u> , 1
	Virtuous (post-growth)	1, <u>4</u>	3, 3

Figure 3: Post-Growth dilemma

How to solve this underlying problem of wrong incentives? It is a well-known theoretical result that the efficient outcome can be reached if the prisoner's dilemma is repeated many times without a final date; in essence repetition opens the door to coordination strategies for the long term. Referring to Olstrom (1990), this solution may help to a certain extent to understand the history of how real communities resolve the tragedies of the commons, but it does not seem very interesting for the pressing issues that post-growth planning is trying to tackle.

Following Bruni (2023), we can then improve our understanding of possible solutions by using another game, the *stag-hunt*, whose logical structure goes back to the famous text by Rousseau (1754) on the "Origin of Inequality among Men", where the philosopher describes a problem of coordination faced by hunters in the pre-modern society.

Each can individually choose to hunt a stag or hunt a hare, without knowing the choice of the other. In order to successfully hunt a stag, cooperation is needed; one can instead get a hare individually, but a hare is worth less than a stag. Hence in game theory the stag hunt describes a conflict between safety and social cooperation.

		2. Hunter	
		Hare (non-virtuous)	Stag (virtuous)
1. Hunter	Hare (non-virtuous)	2, 2	4, 1
	Stag (virtuous)	1, 4	5, 5

Figure 4: Example of stag hunt

By comparing the game in figure 4 with the previous one in figures 3, it is clear that because of the higher value of the payoffs in the bottom right cell, the best response to the virtuous action (in this case Stag) is now to play the virtuous action, therefore the pair of virtuous actions correspond to an equilibrium. It is immediate to notice that if these payoffs were in the post-growth game in figure 3, then the players could possibly end up in the good equilibrium. A stag hunt is in fact a game with two pure strategy Nash equilibria, one that is *risk dominant* and another that is *payoff dominant*. If the risk of non-coordination is high, hunting the hare becomes risk-dominant because success in this activity does not depend on what other agents do,

even though coordinating successfully to hunt the stag leads to both individual and social gains.

Therefore, a second -and perhaps less obvious- result is that for the common good to emerge as the outcome, individuals not only need to have an individual incentive to choose virtuous choices, but also need to trust that other individuals will do the same. Hence trust depends not only on (legal) rules and regulations affecting individual incentives but also on (societal and cultural) norms of coordination. The next section delves into potential solutions to such coordination problem.

4. Collective rules

I continue to follow the approach of Bruni (2023) and discuss the two broad categories of rules already mentioned in section 2: institutional rules and ethical rules.

Bruni (2023) discusses the fundamental idea of Hobbes: rational subjects can understand that without proper incentives the common good outcome cannot be achieved, therefore they create a system of rules and sanctions, i.e. ‘the Leviathan’, ‘at the price of individual freedom’. Bruni (2023) adds that -in addition to the issue of surrender of freedom- the global nature of today’s most relevant commons implies that ‘there is no global Leviathan (and fortunately so)’, and that the failures of ‘agreements on CO2 emissions’, and on other ‘international public goods’ are proof of it.

Referring to the discussion in section 2, we can appreciate that, in the context of post-growth city planning, a “tough” system of rules and sanctions could instead be implementable and possibly effective for certain objectives. For example, there are now endless examples of cities that have drastically diminished environmentally harmful car use through charges and bans. This means to drastically decrease the individual pay-off from an individual non-virtuous choice; in the semantics of figure 3 for example, to set it equal to zero in any case of non-virtuous action, independently from the action of others. However, as already implied by figure 1 in section 2, it seems much more complex to use this approach with for objectives of housing de commodification or shift away from consumerism. In these contexts it is not really clear how virtuous choices can be incentivised by institutional rules, and not even how such choices may impact on the aggregate, or in turn depend from aggregate social and economic outcomes.

The other category of rules discussed by Bruni (2023) points to individual ethics, ‘whether Kantian or of other inspiration’, where individuals ‘internalize’ ethical norms and freely prefer to follow them. Figure 5 presents

a modification of the game in figure 3 which accounts for individual ethics. Following Bruni (2023), I add a value ε to the payoff from the virtuous choice, irrespective of what the other player does, in order to account for the intrinsic reward (ε) from taking the “right” choice given ethics. Clearly, if this value is large enough (in this case larger than 1) a citizen chooses the virtuous action no matter what others do, and the common good outcome becomes the unique equilibrium²⁰.

		2. Banker	
		Non-Virtuous	Virtuous (Altruist)
1. Teacher	Non-Virtuous	2, 2	4, $1+\varepsilon$
	Virtuous (Altruist)	$1+\varepsilon$, 4	$3+\varepsilon$, $3+\varepsilon$

Figure 5: Post-Growth dilemma with ethics

Consistently with the result in figure 5, the analysis of post-growth planning objectives in section 2 explicitly mentions the importance of ethics and the necessity that new social norms and societal values are internalized by individuals. The contribution of figure 5 is to clarify that for those good objectives to become outcomes those ethical rules need to imply *unconditional altruistic/cooperative behaviour*, in other words the desire to contribute to the common good no matter what others do. As extensively studied by the economics of giving, altruism and reciprocity such unconditional altruism does exist in societies but it is also rare. Moreover, in practice it is difficult to understand how societies can move from low to high values of ε or how ethics (values of ε), individual choices and outcomes (in this case equilibria) are in fact inter-dependent²¹.

Conclusion

This article investigated the links between general planning objectives of the new post-growth discourse and the tradition of economics that focuses on contributions towards the common good, rather than on self-interest. In

²⁰ As already mentioned in the introduction, more technical contributions, see for example Bruni (2008), show that a small number of unconditional altruists/cooperators can trigger the cooperative equilibrium with many players. I leave more specific applied questions on those issues for future research.

²¹ See Benabou and Tirole (2016) for a more sophisticated analysis of those interdependencies.

particular, the article focuses on the analytically complex link between individual decisions/incentives and aggregate/societal outcomes.

Theoretical results imply the following propositions:

- 1) Post-growth planning objectives can be understood as means to implement overarching aims of common good through the management of commons;
- 2) Lessons from economics explore the links between individual decisions and aggregate outcomes, and address the complexity of those mutual links for the optimal design of institutional rules and regulations;
- 3) In general, specific policy ideas and proposals related to post-growth planning can be conceptualized at the intersection of aims of common good and lessons about the economics of commons;
- 4) Common good outcomes are unlikely to happen if the individual incentive is to act in a self-interested way;
- 5) For the common good to emerge as the outcome, individuals not only need to have an individual incentive to choose virtuous choices, but also need to trust that other individuals will do the same;
- 6) A “tough” system of rules and sanctions could possibly be effective for post-growth planning objectives that are determined by individual environmental choices;
- 7) For a societal transition towards non-consumeristic and anti-commodification choices, ethical rules need to imply *unconditional altruistic/cooperative behaviour*, in other words the desire to contribute to the common good no matter what others do.

The article demonstrates that interdisciplinary dialogues between post-growth planning and economics are possible and potentially fruitful. The article offers a common language for these dialogues, a general framework, and a theoretical first step towards a more specific analysis of policy proposals for future research.

Bibliography

Alesina, A., & Angeletos, G.-M. (2005). "Fairness and Redistribution". In *The American Economic Review*, 95(4), pp. 960–980.

Arler, F. (2006). "Ethics and Cost-Benefit Analysis". Aalborg: Technology, Environment and Society, Department of Development and Planning, Aalborg University. Research Report, No. 4.

Attar, A. and Mariotti, T. (2020) "Free Market or Socialism: Have Economists Really Anything to Say?". *Institute for New Economic Thinking* online article <https://www.ineteconomics.org/perspectives/blog/free-market-or-socialism-have-economists-really-anything-to-say>

Bénabou, R. (2000). "Unequal Societies: Income Distribution and the Social Contract". In *The American Economic Review*, 90(1), pp. 96–129.

Bénabou, R., and J. Tirole. 2016. "Mindful Economics: The Production, Consumption, and Value of Beliefs." In the *Journal of Economic Perspectives*, 30 (3): pp. 141–64.

Bernheim, B. D., DellaVigna, S., Laibson, D. (2018). Preface in the *Handbook of Behavioral Economics: Applications and Foundations 1*, Volume 1, pp. xiii-xvi.

Bruni, L. (2008). *Reciprocity, altruism and the civil society: in praise of heterogeneity*. Routledge studies in the history of economics; 94.

Bruni, L. (2023). "Economics and the Commons: History, Tragedies, and Some Exercises," Chapter 1 in *Contributions to Economics: Rethinking Economics Starting from the Commons*, edited by V. Rotondi & P. Santori, Springer, pp. 1-15.

Bruni, L. & Porta, P.,L. (2007). Introduction in the *Handbook on the Economics of Happiness*, Elgar Publishing, number 3437, December, pp. xii-xxxvii.

Conde M., D'Alisa G. and Sekulova F. (2022). "When greening is not degrowth: cost-shifting insights". In *Post-Growth Planning Cities Beyond the Market Economy*, edited by Savini F., Ferreira I. A., von Schönfeld K. C., First edition, Routledge, pp. 19-32.

De Angelis, M. (2022). "The City as a Commons Diffused Governance for Social and Ecological Reproduction". In *Post-Growth Planning Cities Beyond the Market Economy*, edited by Savini F., Ferreira I. A., von Schönfeld K. C., First edition, Routledge, pp. 97-111.

DiPasquale, D. and Wheaton, W. (1992) "The Markets for Real Estate Assets and Space: A Conceptual Framework". In the *Journal of the American Real Estate and Urban Economics Association*, Vol. 20 No2, pp. 181-197.

Elster, J. (1979) *Ulysses and the Sirens: Studies in Rationality and Irrationality*. Cambridge University Press, New York.

Elster, J. (2006). "Altruistic Behavior and Altruistic Motivations". Chapter 3 in the *Handbook of the Economics of Giving, Altruism and Reciprocity*, edited by S. Kolm and Jean Mercier Ythier, Elsevier, vol. 1, pp. 183-206.

Gabrieli, T. (2021). "The (Implicit) Microeconomic Foundations of The Economy of Francesco". In *Rivista Internazionale di Scienze Sociali*, vol. 129(4), pp. 471-486.

Ghosal S. (2023). "Moral sentiments and self-interest in Adam Smith: two comments". In *National Institute Economic Review*; 265: pp. 157-166.

Hann, C. (2006) "The Gift and Reciprocity: Perspectives from Economic Anthropology". In *Handbook of the Economics of Giving, Altruism and Reciprocity*, edited by S. Kolm and J. Mercier Ythier, Elsevier, vol. 1, pp. 203-227.

Hardin, G. (1968). "The Tragedy of the Commons". In *Science*, 162, pp. 1243-1248.

Hardin, G. (1985). *Filters against folly: how to survive despite economists, ecologists, and the merely eloquent*, Viking: New York.

Hill, D., and Mazzucato, M. (2024). "Modern Housing: An environmental common good". UCL Institute for Innovation and Public Purpose Working Paper Series: IIPP WP 2024-03.

Kahneman, D. and Tversky, A. (1984) "Choices, Values, and Frames". In *American Psychologist*, 39, pp. 341-350.

Kaushik, Basu & Lòpez-Calva, Luis F. (2011). Functionings and Capabilities, Chapter 3 in the *Handbook of Social Choice and Welfare*, edited by K. J. Arrow, A. K. Sen & K. Suzumura, Elsevier, volume 2, chapter 16, pp. 153-187.

Keogh, G. & D'Arcy, E. (1999) "Property market efficiency: an institutional economics perspective". In *Urban Studies*, Vol. 36, pp. 2401-2414.

Kolm, Serge-Christophe, and Jean Mercier Ythier, eds. (2006). *Handbook of the economics of giving, altruism and reciprocity: Foundations*. Elsevier.

Lloyd, W., F. (1832). *Two Lectures on the Checks to Population, Lecture I*. Delivered before The University of Oxford. Available at https://en.wikisource.org/wiki/Two_Lectures_on_the_Checks_to_Population/Lecture_1

Mas-Colell, Andreu & Whinston, Michael D. & Green, Jerry R. (1995). *Microeconomic Theory*, Oxford University Press.

Meltzer, A. H., & Richard, S. F. (1981). "A Rational Theory of the Size of Government". In *Journal of Political Economy*, 89(5), pp. 914–927.

Nash, J. (1950) "Equilibrium Points in n-Person Games". In *Proceedings of the National Academy of Science*, 36, pp. 48-49.

Nelson, J., Rotondi, V., & Santori, P. (2023). "Economics and the Ethics of Care". In *Rethinking Economics Starting From the Commons: Towards an Economics of Francesco*. Edited by V. Rotondi, and P. Santori, Springer, Contributions to Economics, pp. 31-42.

Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge: Cambridge University Press.

Piketty, T. (1995). "Social Mobility and Redistributive Politics". In *The Quarterly Journal of Economics*, 110(3), pp. 551–584.

Ryan-Collins, J., Lloyd, T. and MacFarlane, L. (2017). *Rethinking the Economics of Land and Housing*. London: Bloomsbury.

Rousseau, J.-J. (1754). *Discourse on the Origin of Inequality*. Penguin Classics 1984 revised edition.

Sacco, P. L., Vanin, P. and Zamagni, S. (2006). "The Economics of Human Relationships". Chapter 9 in *Handbook of the Economics of Giving, Altruism and Reciprocity*, edited by Kolm S. and Ythier J. M., Elsevier, vol. 1, pp. 695-730.

Samuelson, P. (1954). The Pure Theory of Public Expenditure. *The Review of Economics and Statistics*, 36, pp. 387-389.

Savini, F. (2021). "Towards an urban degrowth: Habitability, finity and polycentric autonomism". In *Environment and Planning A: Economy and Space*, 53(5), pp. 1076-1095.

Savini, F. (2024). "Post-Growth, Degrowth, the Doughnut, and Circular Economy: A Short Guide for Policymakers". In *Journal of City Climate Policy and Economy* 2024 2:2, pp. 113-123.

Savini F., Ferreira I. A., von Schönfeld K. C. (2022). "Uncoupling planning and economic growth: towards post-growth urban principles." An introduction to *Post-Growth Planning Cities Beyond the Market Economy*. First edition, Routledge, pp. 3-18.

Savini F. and Bossuyt D. (2022). "Housing commons as a degrowth planning practice: learning from Amsterdam's de Nieuwe Meent". In *Post-Growth Planning Cities Beyond the Market Economy*, edited by Savini F., Ferreira I. A., von Schönfeld K. C., First edition, Routledge, pp. 35-48.

Veal, A. J. (2006) "Economics of leisure". In *A handbook of Leisure Studies* Edited by C. Rojek, S. Shaw and A. J. Veal. Basingstoke, UK: Palgrave Macmillan. pp. 140-61

Worstell, T. Mariana Mazzucato responds to Tim Worstell. In *Forbes*, 17th December 2013. Available online at <https://www.forbes.com/sites/timworstell/2013/12/17/mariana-mazzucato-responds-to-tim-worstell>

zu Ermgassen S., Corlet Walker, C., and Ryan-Collins, J. (2022). England's housing strategy carries a high carbon cost – unless politicians are willing to change plans. In *The Conversation*. Available online at <https://theconversation.com/englands-housing-strategy-carries-a-high-carbon-cost-unless-politicians-are-willing-to-change-plans-189729>