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Agrowth Instead of Anti- and Pro-Growth: Less Polarization, More Support for Sustainability/climate Policies[1]

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Abstract

An agrowth strategy, defined as being agnostic and indifferent about GDP growth, is proposed as an alternative to unconditional anti- and pro-growth strategies. It is argued that such a strategy can contribute to reducing scientific and political polarization in the long-standing debate on growth versus the environment. Hence, it can broaden urgently needed support for serious sustainability and climate policies. The exposition includes a novel graphical illustration, a summary of recent surveys of citizens and scientists regarding support for an agrowth position, and a discussion of implications for population growth and policies.

1. I am grateful to the editor, David Samways, for careful reading and insightful comments.

1. Growth fixation as a barrier to sustainability policies

Humanity faces serious sustainability challenges but has been incapable so far of implementing sufficiently strict policies that guarantee a sustainable course of the economy. One important reason is that voters and politicians – fueled by pessimistic environmental science studies – fear that serious policies will hamper economic growth. Whether this will be the case or not is of no relevance. What matters is the psychology behind it. If people cannot be convinced that policies will not harm growth then such policies will not receive majority support. Of course, one could respond by claiming that green growth is possible, even though the evidence for this is weak. In fact, the uncertainty surrounding this issue is immense and it is impossible to provide definite proof of whether or not green growth is feasible. What we know for sure is that current growth is not sustainable and that for a while, during a transition phase, it will remain unsustainable. One way out of this dilemma is to refrain from trying to convince voters and politicians that green growth is possible. In fact, economists have been unsuccessful in persuading both groups, otherwise good sustainability policies would have already been implemented. I will propose here that we should become agnostic and indifferent about GDP growth, i.e. adopt an *agrowth* position (van den Bergh, 2011). One reason is that the GDP is not a good indicator of happiness or social welfare. Another reason applies specifically to rich countries where for some time increases in average income growth have not contributed to significant increases in social welfare.

Climate change illustrates the need for an ideological shift to agrowth (van den Bergh, 2017a). The challenges posed by climate change and policies to tackle it have revived the growth debate. Modern economies and lifestyles are highly dependent on burning fossil fuels, generating CO_2 emissions responsible for global warming. If per capita GDP increases by 1.5% annually, to realize the 2°C goal (supported by IPCC and the Paris Climate Agreement), carbon intensity or emissions per unit of GDP should decrease by some 80% by 2050, which comes down to a 4.4% average annual improvement (Antal and van den Bergh, 2016). Even if economic growth would come to a halt – i.e. in the case of zero growth – still an impressive 67% intensity reduction, or 2.9% on average per year, will be required. Since these reduction rates should be net of all energy rebound (Sorrell, 2007) and carbon leakage effects (Felder and Rutherford, 1993), they are merely lower bounds. Under serious climate policy the rate of economic growth

is thus likely to drop for some time, possibly until we have reached a zero-carbon economy. Such a consequence will induce fear for and opposition to associated climate policies in many advocates of green growth. An agrowth strategy, on the other hand, will facilitate the acceptance of these policies as it will free us from the unnecessary, welfare-obstructing growth paradigm. This will result in removing false trade-offs between GDP growth and other goals arising from the constraint of always, at any time and under any conditions, having to achieve GDP growth.

2. We should abandon GDP but are unable

A large majority of economists, journalists and politicians, irrespective of their political affiliation, express themselves uncritically about GDP and fail to distinguish it clearly from (social) welfare. Nevertheless, a growing group of economists, including many Nobel laureates, have explicitly accepted the shortcomings of GDP (summarized in Table 1). Early critics included eminent economists such as Kuznets (1941), Galbraith (1958) and Samuelson (1961). Later influential voices are Mishan (1967), Nordhaus and Tobin (1972), Hueting (1974), Hirsch (1976), Sen (1976), Scitovsky (1976), Daly (1977), Tinbergen and Hueting (1992), and Arrow et al. (1995); more recent contributions come from Frank (2004), Kahneman et al. (2004), Victor (2008) and Jackson (2009).

In line with this, empirical research on happiness suggests that in most Western (OECD) countries the increase in prosperity or happiness stagnated somewhere in the period between 1950 and 1970 or even reversed to negative trend, despite the steady growth in GDP per capita (Layard, 2005). This is supported by empirical studies of alternative indicators of social welfare, such as the ISEW (Index of Sustainable Economic Welfare) (Daly and Cobb, 1989). Moreover, psychological research has found that individuals quickly become accustomed or adapt to new conditions, including income increases, and as a result welfare increases fall short of ex ante expectations (Easterlin, 1974).

Unfortunately, the majority of economists are less critical and accept or even overtly support the false idea that that GDP growth always means progress. They should realize that both microeconomic and macroeconomic theories tend to formulate societal goals in terms of social welfare not GDP or its change. In the standard utility-maximizing behavioral model of microeconomics, income co-determines, with prices, the budget constraint, rather than being a proxy for

utility. Likewise, in macroeconomics, growth theory is dominated by models of optimal economic growth in which the guiding criterion is (intertemporal) social welfare rather than an aggregate GDP type of income measure.

Table 1. Main shortcomings of GDP as a proxy of social welfare

General	Specific
GDP use does not satisfy basic principles of good bookkeeping.	– GDP does not distinguish clearly between costs and benefits. – It does not correct for changes in (economic and environment) stocks. – It does not account for external (or social=private+ external) costs. – It is an estimate of the costs rather than benefits of market activities in a country.
Using GDP (growth) as a proxy of social welfare (progress) is inconsistent with the general welfare focus in microeconomics and macroeconomics.	– Optimal growth theory employs social welfare rather than GDP/income type of criteria. – In microeconomics, income is part of the budget constraint, not a proxy of utility. – If income is not a robust measure of welfare at the individual or micro-level, then aggregation of individual incomes into GDP cannot result in a robust indicator of social welfare.
GDP does not capture stylized facts of empirical research on subjective well-being (happiness).	– Modern income growth increases material consumption at the cost of basic needs like serenity, clean air, and direct access to nature; the latter are, however, not captured by GDP. – Somewhere between 1960 and the present, the increase in welfare stagnated or even reversed into a negative trend in most Western countries, despite the steady pace of GDP growth. – Individuals may adapt or get used to changed circumstances, including a higher income; thus well-being may temporarily change in response but then return to its baseline level.
GDP does not capture income inequality, relative income, and status-seeking in consumption.	– GDP per capita emphasizes average income, and neglects the income distribution, even though this affects opportunities for personal development and well-being. – GDP does not capture that individuals or families with low incomes benefit relatively more from an

	income rise, because of the diminishing marginal utility of income. – Welfare is relative or context-dependent, characterized by comparing oneself with others, rivalry via "positional or status goods". – As GDP omits relative income aspects of welfare, it tends to overestimate social welfare and progress. – Rises in relative income and welfare come down to a zero-sum game: one individual loses what another one gains; GDP cannot account for this.
GDP neglects the informal economy, its share in the whole economy, and its change.	– In general, GDP just covers activities and transactions that have a market price and neglects informal transactions between people that occur outside formal markets. – Actual GDP growth sometimes reflects a transfer of existing informal activities (unpaid labor) to the formal market; so the benefits were already enjoyed but the market costs were not yet part of GDP. – This holds for both developed and developing countries, and for such informal activities as subsistence agriculture, voluntary work, household work, and child care. – The GDP can, therefore, not serve as a measure to judge the welfare impact of fundamental changes that involve a transition from informal to a formal activities.
GDP does not capture environmental externalities, damage to ecosystems, and depletion of renewable and non-renewable natural resources.	– The presence of externalities means that market prices do not reflect total social (=private+ external) costs, making them unreliable signals. GDP is, however, calculated using these prices. – If air, water, or a natural area are being polluted, any damage does not enter GDP, but when pollution is being cleaned up this contributes to GDP. – Capital depreciation associated with environmental changes (fish stocks, forests, biodiversity) and depletion of resource supplies (fossil energy, metal ores) is missing from the GDP calculation. As a result, GDP suggests we are richer than we really are.

NOTE: THIS TABLE IS REPRODUCED FROM VAN DEN BERGH (2017) AND SUMMARIZES THE SURVEY IN VAN DEN BERGH (2009).

So if this is all true, why do so many influential people get nervous when there is little GDP growth? This paradox (van den Bergh, 2009) can be explained by all of us constantly receiving the message, through news media and in education, that economic growth is imperative. Moreover, the response to low GDP growth from politicians, economists, financial markets and international organizations like the OECD (e.g., 2011), the World Bank (e.g., 2012), and the IMF is consistently negative. They all signal that GDP growth is a sine qua non for our society. An important additional reason is the widespread belief that GDP growth is a necessary condition for economic stability and full employment. Empirical evidence for this view is weak though, indicating that the relationship between GDP and employment is not constant (Saget, 2000). Broadly accepted insights about long-run equilibrium employment suggest that it depends more on search time (jobs and employees); structural mismatches between education and work; the difference between gross and net income; and the gap between income and unemployment benefits (Pissarides, 2000). Moreover, the causality of growth and employment is easily confused as more employment can increase GDP rather than the reverse. In this respect, the "productivity trap", coined by Jackson and Victor (2011), is relevant. It denotes that growth compensates for potential unemployment resulting from technological innovation driving labor productivity improvements. This is possible as a higher labor productivity translates into higher incomes, allowing for additional purchasing power to balance the larger production capacity associated with productivity increases. This is, in a nutshell, the fundamental mechanism driving economic growth. Incidentally, by shifting taxes from income to environmental externalities one could redirect technological change from improving the productivity of labor to that of energy and material inputs to production. As a result, it would be easier to realize full employment and environmental goals simultaneously.

3. *Agrowth* elaborated

An *agrowth* position or strategy comes down to being agnostic about, i.e. ignoring, the GDP (per capita) indicator in public debates and policymaking. It means we will be indifferent, neutral or "agnostic" about the desirability of GDP growth, an idea first proposed in van den Bergh (2011). The motivation is the insight that unconditional growth implies an unnecessary and avoidable constraint on the search for human welfare and progress. By definition, such a constraint hampers the achievement of good public policies and decisions in any

area, whether social, health, labor, equity, education, environment or climate. This is graphically illustrated by Figure 1 in van den Bergh (2017a). One should note that an agrowth position opposes unconditional GDP growth, also known as the growth paradigm, but not growth per se.

Under an agrowth strategy, periods of high, low, zero and even negative growth could alternate with one another, as long as environmentally sustainability and progress in terms of welfare were guaranteed. We would no longer give priority to average income over welfare, or assume growth would be necessary or sufficient for progress. While progress might sometimes coincide with growth, nobody would really care. With regard to environmental pressures, an agrowth strategy would allow for selective decline and selective growth of distinct economic and industrial sectors which would not necessarily translate into aggregate GDP growth.

By ignoring GDP information, we would in some periods be capable to give up potential GDP growth for a better environment, less unemployment, more income equality, more leisure or better health care. As a result, welfare-enhancing policy would be given priority over GDP growth-enhancing policy. This would contribute to social-political acceptability of public policies focusing on solving urgent and socially important problems that are likely to reduce social welfare. Such an approach is consistent with the advice by Nobel laureate Daniel Kahneman et al. (2004) to focus the attention of public policy on minimizing unhappiness. Clear examples are avoiding dangerous climate change, minimizing structurally high unemployment, and reducing extreme inequality and poverty. Whether these policies would work out well in terms of growth of GDP (per capita) would no longer be an issue.

Another advantage of an agrowth strategy is that it increases economic stability and reduces the likelihood of economic crises. The reason is that it weakens positive feedback in the economy which contributes to business cycles and crises. As argued in Antal and van den Bergh (2013), the current economic system is self-amplifying because a majority of the connections between important economic system variables take the form of positive feedbacks, while a minority of such connections takes the form of negative feedbacks. A positive feedback denotes that an output of a system enters the same system as an input, which then reinforces

the actual trend in the output. This is irrespective of whether the trend is a decline or a growth pattern. In other words, positive feedback can generate negative and positive spirals. Expectation about, and predictions of, GDP growth can be characterized as being pro-cyclical, in the sense that if it is widely believed that such information has a significant influence on reality, then, through pessimistic (or optimistic) reactions to negative (positive) growth expectations, these beliefs become self-fulfilling. This sets in motion positive feedback affecting, among others, consumer expenditures and savings, firm expenditures and investments, which result in economic instability.

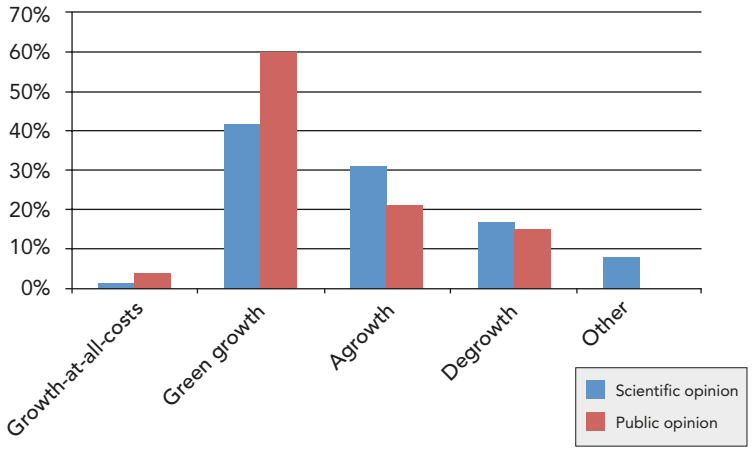
Positive feedback assures that, as long as we are on the upward trend, there is optimism about the economy. If, though, growth weakens and expectations are not met, pessimism about future GDP growth starts to set in, potentially leading to a recession. Two common solutions are offered by Keynesian and monetarist or new classical[2] schools of macroeconomics. The first recommends stimulating aggregate demand by increasing public spending or lowering taxes. The second proposes austerity and debt reduction to restore confidence. These strategies, although polar opposites, share the goal of restoring the upward economic spiral driven by positive feedback. And in environmental terms, both put their full confidence in green growth. Instead, an agrowth strategy tackles a fundamental positive feedback mechanism underlying economic instability, namely the role of GDP information. By suggesting to ignore the GDP indicator, it weakens positive feedback in the economy, resulting in a more stable economy. This will discourage extremely high growth rates but also lower the probability of recessions.

Antal and van den Bergh (2013) discuss a long list of options to weaken other positive feedbacks and strengthen or create negative feedbacks, with the aim to improve economic stability. One recommendation is to replace the GDP by another indicator, such as the Human Development Index, an income inequality measure (Gini index or median income), or an ISEW-type of proxy of social welfare (Daly and Cobb, 1989). Another idea is to construct an index that is an average of a minimum, medium and mean income, as it results in a monetary indicator that captures income inequality well (van den Bergh, 2017a).

2. Aimed at establishing neoclassical microeconomic foundations for macroeconomic analysis.

Empirical evidence suggests that agrowth may count on reasonable support, which means it could depolarize the debate on growth-versus-environment. Figure 1 depicts results from two questionnaire surveys, among scientists and citizens. While green growth is the most popular position, scientists express relatively more support for agrowth and less for green growth than citizens. With more discussion of a recent and new idea like agrowth one might expect support for it to increase.

Figure 1. Scientists' versus citizens' preferences for a public policy strategy regarding growth and the environment



SOURCE: VAN DEN BERGH AND DREWS (2019). DATA FROM DREWS AND VAN DEN BERGH (2016 AND 2017).

4. Riskiness of pro- and anti-growth strategies

The historical debate on growth versus the environment is often summarized as between optimists believing in limitless growth and pessimists seeing environmental and natural resource limits to growth. This opposition best defines the main policies and strategies found: namely, striving for green growth by decoupling income and production from environmental pressure versus an anti-growth approach taking the form of stopping growth (zero-growth) for the sake of the environment. However, a more subtle classification of viewpoints in the growth debate is possible, such as the five perspectives identified by van den Bergh and de Mooij (1999): a moralist, denying the relevance of further growth for individual and social welfare, notably in rich countries; a pessimist, stressing

environmental and resource limits to growth; a technocrat, seeing markets and technological progress as powerful mechanisms to relieve any existing limits; a sceptic, assessing economic growth and environmental ruin as both unavoidable; and an optimist, considering growth as a requirement for solving environmental problems since it makes citizens more concerned about the environment.

Even though many economists and international organizations express a strong belief in green growth, few politicians demonstrate that they share this belief through their actual decisions. Instead, they signal fear that serious climate policies will reduce the rate of economic growth. This suggests that economists have not provided sufficiently convincing evidence for the feasibility of green growth. This is no surprise, as the future is uncertain, and we have not yet succeeded in applying all the policy conditions that guarantee a sustainable economy, hence we do not know if such an economy could steadily grow in GDP terms. Theory says both outcomes are possible (Acemoglu et al., 2012). If green growth is not feasible, however, any strong messages about its realization will create false hopes. As a result, one will harm either the environment or economic stability.

Recently, a particular expression of anti-growth has appeared: so-called "degrowth" has the explicit aim of downscaling the economy to meet environmental goals (Schneider et al., 2010; Kallis, 2011). It can be interpreted as complicating climate policy with a quest for radical change. Degrowth is unlikely to be an effective strategy for creating broad political support given that it focuses on variables with an indirect link to emissions, instead of on the carbon content of growth, in addition to its basic message that we need income and other sacrifices to save the environment (Drews and Antal, 2016). Furthermore, as degrowth does not follow a clear welfare approach and is not focused on sharply distinguishing between low-carbon and high-carbon consumption, it runs the risk of destroying too much welfare for the purpose of sustainability, without even guaranteeing an effective, let alone a cost-effective, way of solving sustainability problems. For instance, the degrowth proposal does not offer a clear framework for satisfactorily balancing – from a welfare perspective – changes in inputs (e.g., fuels), energy efficiency of technologies, composition of production and consumption, and volume or scale of activities. Any physical or GDP degrowth goal will then be arbitrary and debatable. Another shortcoming is that the term "degrowth" is defined and used differently by distinct authors. One can identify

at least five interpretations (van den Bergh, 2011), namely as GDP decline, less consumption (unclear how measured), a work-time reduction, a smaller physical size of the economy, and a radical move away from "capitalism" and markets. Such ambiguity does not contribute to productive societal or scientific exchange. The proposal for degrowth is likely to contribute to polarization, creating sharp differences between supporters and opponents of degrowth. If we sell climate solutions as degrowth, then support for these is likely to diminish rather than rise over time.

Instead, an agrowth strategy can, because of its neutrality and indifference regarding GDP growth, bridge pro-growth and anti-growth views and so reduce polarization. In fact, I have many personal experiences with degrowth and green growth believers expressing support for the agrowth position. To see why it can bridge the divide, one should recognize that agrowth does not preclude GDP growth when it is feasible and improves human welfare, and neither rejects GDP decline when an outcome of good social or environmental policies. In view of this, an agrowth strategy has the potential to create and amplify the political space for balancing distinct components of social welfare, such as consumption, employment, environment, leisure, health, and inequality. In particular, agrowth will make it easier to sell serious climate policy to the public and politicians, much easier than selling degrowth. In addition, by tempering preoccupation with continued GDP growth, it will moderate panic that is common among economists, journalists and politicians when GDP growth slows down. In other words, an agrowth strategy contributes to economic stability.

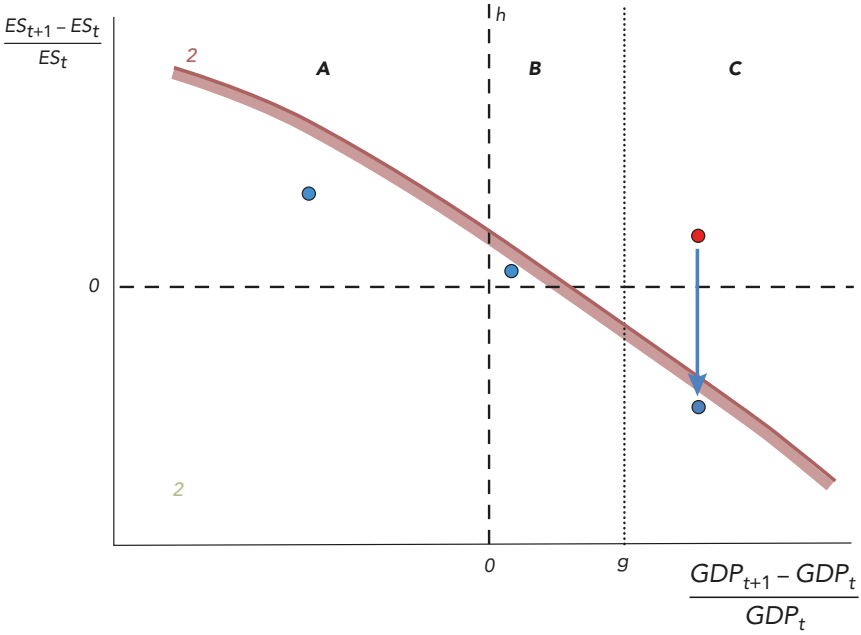
Figures 2 and 3 graphically illustrate that an agrowth strategy, i.e. indifference about where on the horizontal axis (indicating the rate of GDP growth) the economy is positioned, is robust against uncertainty about the relationship (curve *1* versus *2*) between the GDP growth rate (horizontal axis) and the change in other components of human welfare including environmental sustainability (*ES*) (vertical axis). It is assumed here that environmentally desirable outcomes require being positioned above the horizontal *0* (zero) line, meaning that no reductions in environmental performance are accepted. Hence, a degrowth strategy strives to be in (rectangular) area *A*, a zero-growth strategy on the top (positive) part of vertical line *h*, a low growth strategy in (rectangular) area *B*, and a high-growth strategy in (rectangular) area *C* (where growth is higher than rate *g*, such as the

often expressed desire of at least 2% growth). However, an agrowth strategy does not exclude any of these areas.

Now, a pessimistic perspective on the growth-vs-environment relationship is shown in Figure 2 through a downward-sloped curve *1* that represents the upper bound to feasible combinations of changes in *GDP* and *ES*, while Figure 3 displays an optimistic perspective through an upward-sloped curve *2*. Consider first Figure 2, where a green growth strategy aiming for growth beyond the rate *g* is not wise as it will not achieve its aim of ending up in area *C*. The reason is illustrated by the red position above the constraint *1* which represents an infeasible goal. If one strives for high growth associated with it, the economy will end up in the blue point below the constraint (following the arrow). In this case degrowth (area *A*) and low growth (area *B*) strategies are feasible. On the other hand, in the case depicted in Figure 3, a high growth strategy is feasible but a degrowth strategy not because while environmental impacts get lower, it becomes increasing difficult to sustain human welfare. Indeed, trying to be in area *A* fails here as one will be forced to be below constraint *2*, indicated by an arrow from the red goal to the blue realization. Hence, unlike an agrowth strategy that is tolerant to any outcome (positive, zero or negative GDP growth, or areas *A*, *B* and *C*), neither growth and degrowth strategies are robust or precautionary in the face of uncertainty about the conflict between growth and environmental sustainability (represented by uncertainty about whether curve *1* or *2* holds true). For further discussion, see van den Bergh (2017a).

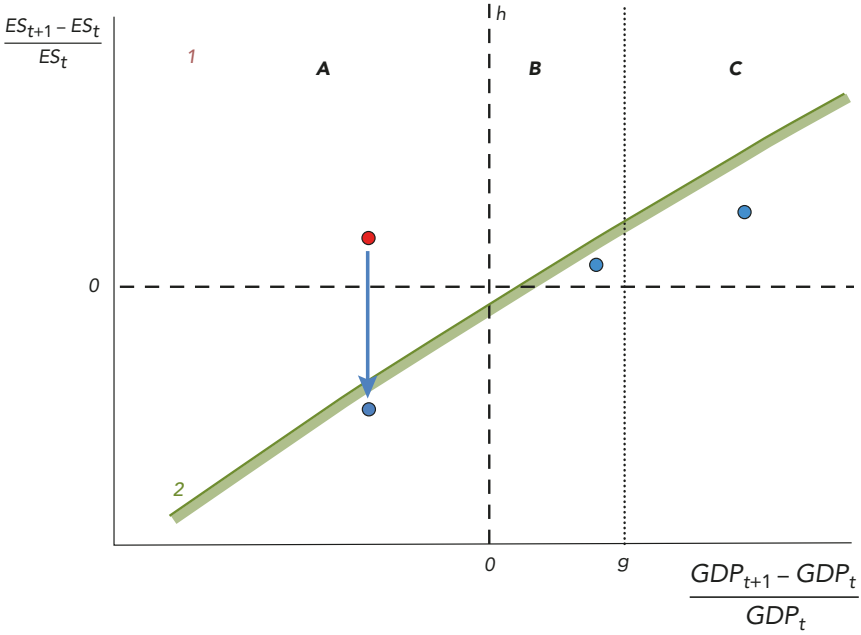
In conclusion, both green growth and degrowth lack credible empirical support and make debatable assumptions. These limitations make either of them risky strategies in solving environmental and climate change problems, as well as more generally in realizing progress in terms of social welfare. We do not need to assume that growth and environment are conflictive or compatible. Recognizing uncertainty about the future and complexity of the economy warrants being precautionary – making an agrowth strategy the better response.

Figure 2. Growth strategy fails in case of conflict between growth and environmental sustainability, while degrowth and agrowth strategies remain within feasibility area indicated by area below brown curve 1.



Note: Search space for human progress spanned by relative changes in GDP & ES in interval [t, t+1]; bold letters denote the rectangles separated by the vertical and horizontal broken lines.

Figure 3. Degrowth strategy fails in case of no conflict between growth and environmental sustainability, while agrowth and growth strategies remain within feasibility area indicated by area below green curve 2.



5. Climate change and population growth

Climate change is also affected by population growth, while income GDP growth affects both of them in different directions with an uncertain net outcome, depending on the country and other factors. On the one hand, before we have made a transition to low-carbon technologies, economic growth will increase emissions directly. On the other hand, increasing income goes along with a demographic transition in certain parts of the developing world, leading birth rates to go down due to, among other factors, a fall in infant mortality leading parents to recognise that fewer births will meet their needs in old age, urbanization, improved education of women and access to contraception (Chesnais, 1992). An agrowth position does not deny the need for economic growth so a scenario where growth contributes to demographic transitions in some countries (notably in sub-Saharan Africa) may be an outcome. In rich countries with low or no

population growth, however, low economic growth is more likely as a transition scenario before a low-carbon economy is achieved. For some middle-income countries with high birth rates the trade-off is less clear beforehand and the net effect of economic growth on emissions, taking population effects into account, may be either positive or negative. An agrowth strategy is consistent with such a diversity of growth strategies in different countries, notably poor and rich ones, unlike a green growth position which requires high growth in all countries, denying national diversity of potential and need for growth. Note that agrowth as a strategy does not apply to population directly. Instead, population growth worldwide needs to be stopped as soon as possible to avoid further overshooting of the human economy, including with regard to global warming.

A recent account of the link between climate and population and adequate policies is provided by Bongaarts and O'Neill (2018). They argue against various misperceptions, such as that population growth is under control and does not matter much for climate change, and that population policies are ineffective and too controversial to succeed. Possibly, the worst decision one can make in terms of climate-change externalities is not to buy a product or service but to have a child (Harford, 1998; Wynes and Nicholas, 2017), unless during its life-time it will invent some cheap zero-emission technology that will change the world. It implies additional emissions over the entire lifetime of a child, decades into the future. With a growing number of people on Earth, the carbon budget associated with a safe climate is quickly exhausted. In view of this, some have proposed, in addition to a tax on the carbon content of energy, goods and services, so-called birth taxes (Kennedy, 1995). One argument why the decision of having a child should be regulated or priced separately is that parents make this decision while arguably only accounting for their own welfare effects and neglecting any social or environmental costs generated by the child in the future. Moreover parents may be insufficiently rational to perceive all private costs of raising children until adulthood. In addition, the desired number of children will be influenced by the culture and religion to which parents belong. Parents will thus be unable to respond rationally or optimally to the sum of private and social costs (as captured by the carbon tax), suggesting that birth regulation is required as well to assure that climate goals are reached. The magnitude of this is not insignificant: Bohn and Stuart (2015) calculate that an optimal child tax equals 21.1% of a corrected per capita income during the time span of a generation. They illustrate this for the

USA, noting that the relevant income measure was on average ± $48,000 per adult per year during the study period, which translates into a child tax of about $10,000 per year during a period of 30 years from birth on. Hence, over the 30 year period the undiscounted sum of annual taxes would amount to $300,000. Implementation of such a policy would arguably also contribute to reducing poverty in the next generation as a larger share of people would be the offspring of relatively rich families who could more easily afford a child tax (even though it would be higher in absolute terms), offering a better start in life in terms of wealth and education. Although such a child tax is sure to meet ethical and political resistance, one should recognize its unique capacity to simultaneously address climate, overpopulation and long-term poverty challenges. Moreover, the associated tax revenues could be used to reduce existing income taxes so as to limit the overall tax burden for households which might simultaneously increase employment (Freire-González, 2018). Incidentally, an alternative for a child tax with similar consequences would be a system of tradable birth permits (a combination of regulation and market mechanism), as proposed by Boulding (1964) and elaborated by Daly (1977) and others (see references in De La Croix and Gosseries, 2009).

6. A transition to an *agrowth* paradigm

One cannot be optimistic about changing the current growth paradigm, but it is worth trying as the permanent focus of our society and politicians on GDP growth forms a barrier to urgently needed sustainability policies. The fear that stringent climate policies will frustrate future economic growth is an important reason for many voters and politicians to be reluctant to genuinely support such policies. This partly explains why the Copenhagen climate summit failed and the recent Paris agreement was designed around voluntary national climate targets rather than globally harmonized policies. The discussion about climate versus growth will probably intensify in the coming years now that the time available to limit global warming is shrinking and serious emissions reductions are still awaited.

The literature on growth-versus-climate shows that theoretical and empirical support for both green growth and anti-growth is weak. Both strategies are risky and do not provide sufficient guarantee for managing climate change or other sustainability challenges. These strategies are also incompatible with a focus on social welfare in normative micro and macroeconomic theories. A third, neutral or indifferent vision called agrowth is more reasonable. It will create a broader basis

of support for stringent climate policies as it will de-polarize the growth debate by bridging the opposition between green growth and anti-growth positions. In contrast to pro-growth, the agrowth strategy does not give priority to income growth over the climate, but is aimed at finding a genuine balance between all aspects of social welfare. That is why it will provide more political scope for effective climate policy, as well as for a fair income distribution. In response to uncertainty about whether to be optimistic or pessimistic about sustainable growth, one can follow a precautionary strategy by being agnostic and being resilient to all possible options.

Since the unconditional pro-growth strategy is dogmatic in nature, change to a new agrowth paradigm will be difficult. Current politics is characterized by nervous reactions to low GDP growth. The preoccupation with GDP growth is invigorated by repetition, in both education and the media, of the erroneous idea that growth is necessary or even sufficient to solve important social problems. Higher economic growth has also been shown to increases the likelihood that government leaders will stay on longer (Burke, 2012). Hence, the pressure on politicians to be guided by unconditional economic growth is unfortunately still great. If change does occur, it is likely to come in stages, such as: first social sciences, then economics, then politics and then voters.

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