International Journal Of Scientific And University Research Publication

ISSN No 301/704

Listed & Index with
ISSN Directory. Paris

Multi-Subject Journal

Volum : (13) | Issue : 205 |

INTERNATIONAL JOURNAL OF SCIENTIFIC AND UNIVERSITY RESEARCH PUBLICATION

Research Paper

COMMENTARY A FURTHER CRITIQUE OF GROWTH ECONOMICS

Herman Daly || School of Public Policy
University of Maryland
United States.

ABSTRACT **Four years ago I wrote a critique of the "Growth Report", a two-year study by the prestigious international Commission on Growth and Development, published by the World Bank (Anon.,2008). Here I would like to reflect on the "reaction" to my review— specifically that it was ignored! Many issues and many people are deservedly ignored. But should we ignore the question of whether growth still increases wealth faster than illth, as it did in the past empty world, or whether in the new full world it has begun to in- crease illth faster than wealth? Is growth still economic in the literal sense, or has it become uneconomic? This is the main question raised in my review. Surely it is not a trivial question, and my discomfort at seeing it roundly ignored transcends the mere personal pique that one feels at being brushed off. So I will begin with a few remarks on why I think my critical review failed to initiate a dialog with the authors of the Growth Report, and why I think that is indicative of a deeper failing within the economics profession. Following that I will consider the eleven fallacies and confusions that in my experience most frequently obstruct reasoning about growth.**

KEYWORDS :Uneconomic growth World Bank, Commission on Growth and Development,

INTRODUCTION

1.1. The Growth Report

The "Growth Report" was done by a blue ribbon panel of 18 members from 16 countries, including two Nobel laureates in economics. It had many august sponsors, the main one being the World Bank. It can fairly be taken to represent the prevailing orthodox view on growth. My review was quite critical. I expected a debate, or at least a reply from the authors of the report. As indicated, they ignored it. Is this fact insignificant, or like Sherlock Holmes' dog that failed to bark in the night, might it be the clue to solving a mystery?

A few sympathetic former colleagues at the World Bank made sure that a copy of my review was sent to authors connected with the World Bank, with the suggestion that a reply was in order. The editor of Population and Development Review renewed his offer to the authors to publish their reply, if they chose to make one. No reply. I realize, of course, that one could waste a lot of time replying to all critics. Some critics are morons. Forgive my immodesty, but for the time being I am assuming that I am not a moron.

Might there be other reasons for silence? Certainly the Commission did not lack intellectual firepower or financial backing for a reply. I think perhaps they made a political calculation of interest and advantage. What would be gained from their point of view by a reply? A blue ribbon panel of experts is presumed to be correct (especially if defending growth!), and a single critic is presumed to be wrong. Why risk upsetting that default presumption with a reply? The Report, after all, was a political manifesto (that is why it had so many co-authors and sponsors), a hymn to growth in the guise of an objective study. It had been widely and favorably reported by the establishment media and therefore had already achieved its goal—namely, to counter the emerging and threatening suspicion that the economic growth of the past empty-world era was morphing into uneconomic growth in the new full-world era. Scholarly debate about the correctness of the report, and the continued viability of growth as the supreme goal of all nations, were not on the agenda—it was very much off message. Probably the authors believed that the case for growth was so ironclad and obvious that any defense of it against criticism was unnecessary. But then, why did they bother to mount such a grand defense of growth in the first place?

I tell this story because it illustrates the unhappy state of public discourse on economic matters, and the lack of seriousness of many economists engaged in such discourse. The Journal of Economic Perspectives, for example, has a policy of not printing comments on articles they have published. Perhaps because they would get too many comments, exposing too much disagreement? Or so few comments because there is such a consensus among economists? Other economics journals do publish comments and replies, but it seems that this practice is less frequent than in the past. Why comment on someone else's work—there is not much academic credit in so doing. Correcting errors may be a necessary part of science, but since economics is not a science anyway, why waste time on it?

Besides, you might make an enemy. Furthermore, consensus among experts is considered the hallmark of a mature science, so by prematurely declaring a consensus among "all competent economists", and avoiding public debate on fundamental questions, economists preemptively lay claim to the status of a mature science.

The advantage of a reputation as a "mature science" is that economists can profitably sell themselves as credibility-enhancing professional consultants to all sorts of interest groups. This was convincingly demonstrated in the documentary film, "Inside Job", detailing the disgraceful behavior of some prominent economists leading up to the 2008 financial debacle.

Pointing to the silence of others when invited to reply to criticism, while a fair debating tactic, is a less than convincing argument against their position. One needs a more direct and specific critique. That was provided in my review, but limited to the specifics of the Growth Report, and will not be repeated here.

What I have called "silence" could just be lack of a response to my particular review, invited by the editor of the journal in which it was published. Perhaps the authors of the Growth Report responded to other critics in other venues who might have raised the same or different issues. Also the Commission may have responded in their own subsequent publications. A wider review of the literature is in order.

There have been two further publications by the Growth Commission since their main Report in May of 2008. In 2009 they published, Post-Crisis Growth in Developing Countries, which asked if the unforeseen financial crisis of September 2008 (four months after the publication of their Report) required any important changes in their conclusions. Understandably the Commission was absorbed in considering a massive "critique" of growth-mania coming from the real world. Academic criticisms could wait. The Commission's vision of growth as summum bonum remained undiminished, however, and was even reinforced by the crisis. Their next publication, Equity and Growth in a Globalizing World (2010),

provided another opportunity to reply, but there was no direct reference, nor anything that might be construed as an indirect reply.

Google and Google Scholar searches of the Commission, the Report, and of the names of each of the Commission co-Chairmen (Danny Leipziger and Michael Spence) combined with my name, failed to turn up any replies. That did not surprise me as much as did the fact that a search for any reviews of the Report itself turned up only a few, and they were mainly just descriptive summaries. For example, Amazon.com urges prospective purchasers to "be the first to review this book". Help from a research librarian who surveyed other data bases failed to turn up critical reviews, replies, or re-joinders. The Commission was not overwhelmed with reviews, perhaps another reason, and an understandable one at that, for their belief that a reply was unnecessary. As lamented earlier, there is not much incentive to write reviews—especially critical ones. Alas, dis-agreements tend to remain unexpressed, doubtful claims undebated, and errors uncorrected.

This unwillingness to engage in discussion, from both directions, leads me to reflect more broadly on the major fallacies of growth economics in the more general context of economic and environmental policy. In this larger context these fallacies also played a part in the

2012 US presidential election. The one thing the Democrats and Republicans agreed on is that economic growth is our number-one goal and is the basic solution to all problems. The idea that growth could conceivably cost more than it is worth at the margin, and there-fore become uneconomic in the literal sense, was not considered, be-cause if true, it would totally overturn the applecart.1 But, aside from political denial, why do many people (especially economists) not understand that continuous growth of the economy (measured either by real GDP or resource throughput) could in theory, and probably has in fact, become uneconomic? What is it that might con- fuse them? The remainder of this essay considers eleven confusions or fallacies that frequently serve as "thought-stoppers" in discussions about growth.

2. Eleven Confusions About Growth

1 One can nearly always find something whose growth would be both desirable and possible. For example, we need more bicycles and can produce more bicycles. More bicycles mean growth. Therefore growth is both good and possible. QED.

However, this confuses aggregate growth with reallocation. Aggregate growth refers to growth in everything: bicycles, cars, houses, ships, cell phones etc. Aggregate growth is growth in scale of the economy, the size of real GDP, which is a value-based index of aggregate production and consequently of the total resource throughput required by that production. In the simplest case of aggregate growth everything produced goes up by the same percentage. Reallocation, by contrast, means that some things go up while others go down, the freed up resources from the latter are transferred to the former. The fact that reallocation remains possible and desirable does not mean that aggregate growth is possible and desirable. The fact that you can reallocate the weight in a boat more efficiently (and even redistribute it more equitably among passengers) does not mean that there is no Plimsoll Line. Too much weight will sink a boat even if it is optimally allocated and justly distributed.

Reallocation of production away from more resource-intensive goods to less resource-intensive goods ("decoupling") is possible to some degree and often advocated, but is limited by two basic facts. First, the economy grows as an integrated whole, not as a loose aggregate of independently changeable sectors. A glance at the input–output table of an economy makes it clear that to in- crease output of any sector requires an increase in all the inputs to that sector from other sectors, and then a second round of in- creased inputs required by the first round of input increases, etc. Second, in addition to this supply interdependence of sectors there are demand constraints—people are just not interested in information services unless they first have enough food and shelter. So trying to cut the resource-intensive food and shelter part of GDP to reallocate to less resource-intensive information services in the name of decoupling GDP from resources, will soon result in a shortage of food and shelter, and a glut of information services.

Aggregate growth was no problem back when the world was relatively empty. But now the world is full, and aggregate growth likely costs more than it is worth, even though more bicycles (and less of something else) might still be possible and desirable.

2 Another confusion is to argue that since GDP is measured in value terms it is therefore not subject to physical limits. This is another argument given for easy "decoupling" of GDP from resource throughput. But growth refers to real GDP, which eliminates price level changes. Real GDP is a value-based index of aggregate quantitative change in real physical production. It is the best index we have of total resource throughput. The unit of measure of real GDP is not dollars, but rather "dollar's worth". A dollar's worth of gasoline is a physical quantity, currently about one-fourth of a gallon. The annual aggregate of all such dollar's worth amounts of all final commodities is real GDP, and even though not expressible in a simple physical unit, it remains a physical aggregate and subject to physical limits. The price level and nominal GDP might grow forever (inflation), but not real GDP, and the latter is the accepted measure of aggregate growth.

3 A more subtle confusion results from looking at past totals rather than present margins. Just look at the huge net benefits of past growth! How can anyone oppose growth when historically it has led to such enormous benefits? Well, there is a good reason: the net benefits of past growth reach a maximum precisely at the point where the rising marginal costs of growth equal the declining marginal benefits—that is to say, at precisely the point where further growth ceases to be economic and becomes uneconomic! Before that point wealth grew faster than illth; beyond that point illth grows faster than wealth, making us poorer, not richer. No one is against being richer. No one denies that growth used to make us richer. The question is, does growth any longer make us richer, or is it now making us poorer? If aggregate growth now makes us poorer, then it can no longer be appealed to as "necessary to end poverty". Ending poverty requires sharing— redistribution rather than more uneconomic growth.

To understand the question requires that we recognize that real GDP has a cost, that illth is a negative joint product with wealth. Examples of illth are everywhere and include: nuclear wastes, climate change from excess carbon in the atmosphere, biodiversity loss, depleted mines, deforestation, eroded topsoil, dry wells and rivers, sea level rise, the dead zone in the Gulf of Mexico, gyres of plastic trash in the oceans, the ozone hole, exhausting and dangerous labor, and the unrepayable debt from trying to push growth in the symbolic financial sector beyond what is possible in the real sector. Since no one buys these annually produced bads (that accumulate into illth) they have no market prices, and since their implicit negative shadow values are hard to estimate in a way comparable to positive market prices, they are usually ignored, or mentioned and quickly forgotten.

The logic of maximization embodied in equating rising marginal cost with declining marginal benefit requires a moment's thought for the

average citizen to understand clearly, but surely it is familiar to anyone who has taken Econ 101.

4 Even if it is theoretically possible that someday the marginal cost of growth will become greater than the marginal benefit, there is no empirical evidence that this has happened yet. On the contrary, there is plenty of casual evidence for anyone who has not been anesthetized by the official party line of Madison Avenue and Wall Street. As for empirical evidence of the statistical type, there are two independent sources that give the same basic answer. First are the objective measures that separate GDP sub-accounts into costs and benefits and then subtract the costs from GDP to approximate net benefits of growth. The Index of Sustainable Economic Welfare (ISEW) and its later modifications into the General Progress Indicator (GPI) both show that, for the US and some other wealthy countries, GDP and GPI were positively correlated up until around 1980, after which GPI leveled off and GDP continued to rise. In other words, increasing throughput as measured by real GDP no longer increased welfare as measured by GPI. A similar disconnect is confirmed using the different measure of self-evaluated happiness. Self-reported happiness in- creases with per capita GDP up to a level of around $20,000, per annum, and then stops rising. The interpretation given is that while absolute real income is important for happiness up to a sufficiency, beyond that point happiness is overwhelmingly a function of the quality of relationships by which our very identity is constituted. Friendships, marriage and family, social stability, trust, fairness, etc., not per capita GDP, are the overwhelming determinants of happiness at the present margin, especially in high-income countries. If we sacrifice friendships, social stability, family time, environmental services, and trust—for the sake of labor mobility, a second job, and quarterly financial returns, we often reduce happiness while increasing GDP. Relative income gains may still increase individual happiness even when increases in absolute income no longer do, but aggregate growth is power- less to increase everyone's relative income because we cannot all be above average. Beyond some level of sufficiency, growth in

GDP no longer increases either self-evaluated happiness or measured economic welfare, but it continues to increase costs of depletion, pollution, congestion, stress, etc. Why is there such resistance to measuring the very magnitudes that could tell us if we have reached this point? A possible answer follows.

5 Many believe that the way we measure GDP automatically makes its growth a trustworthy guide to economic policy. To be counted in GDP, there must be a market transaction, and that implies a willing buyer and seller, neither of whom would have made the transaction if it did not make them better off in their own judgment. Ergo, growth in GDP must be good or it would not have happened. The problem here is that there are many third parties who are affected by many transactions, but did not agree to them. These external costs (or sometimes benefits) are not count- ed in GDP. Who are these third parties? The public in general, but more specifically the poor who lack the money to express their preferences in the market, future generations who of course can- not bid in present markets, and other species who have no influence on markets at all.

In addition, GDP, the largest component of which is National In- come, counts consumption of natural capital as income. Counting capital consumption as income is the cardinal sin of accounting. Cut down the entire forest this year and sell it, and the entire amount is treated as this year's income. Pump all the petroleum and sell it, and add that to this year's income. But income in economics is by definition the maximum amount that a community can produce and consume this year, and still be able to produce and consume the same amount next year (Hicks, 1946). In other words income is the maximum consumption that still leaves in- tact the capacity to produce the same amount next year. Only the sustainable yield of forests, fisheries, croplands, and livestock herds is this year's income—the rest is capital needed to reproduce the same yield next year. Consuming capital means reduced production and consumption in the future. Income is by definition sustainable; capital consumption is not. The whole historical reason for income accounting is to avoid impoverishment by inadvertent consumption of capital. By contrast our national ac- counting tends to encourage capital consumption (at least consumption of natural capital), first by counting it in GDP, and then claiming that whatever increases GDP is good!

As already noted we fail to subtract negative by-products (external costs) from GDP on the grounds that they have no market price since obviously no one wants to buy bads. But people do buy anti-bads, and we count those expenditures. For example, the costs of pollution (a bad) are not subtracted, but the expenditures on pollution cleanup (an anti-bad) are added. This is asymmetric accounting—adding anti-bads without having subtracted the bads that made the anti-bads necessary in the first place. The more bads, the more anti-bads, and the greater is GDP— wheel spinning registered as forward motion.

There are other problems with GDP but these should be enough to refute the mistaken idea that if something is not a net benefit it would not have been counted in GDP, so therefore GDP growth must always be good.

6 As natural resources become scarce we can substitute capital for resources and continue to grow. Growth economists assume a high degree of substitutability between factors of production, including capital for resources (Daly, 2007). But if one considers a realistic analytic description of production, as given in Georgescu-Roegen's (1972) fund-flow model, one sees that factors are of two qualitatively different kinds: resource flows that are physically transformed into flows of product and waste; and capital and labor funds, the agents or instruments of transformation that are not themselves physically embodied in the product. There are varying degrees of substitution between different resource flows, and between the funds of labor and capital. But the basic relation between resource flow on the one hand, and capital (or labor) fund on the other, is complementarity. You cannot bake a ten-pound cake with only one pound of ingredients, no matter how many cooks and ovens you have. Efficient cause (capital) does not substitute for mate- rial cause (resources). Material cause and efficient cause are related as complements, and the one in short supply is limiting. Complementarity makes possible the existence of a limiting factor, which cannot exist under substitutability. In yesterday's empty world the limiting factor was capital; in today's full world remaining natural resources have become limiting. This fundamental change in the pattern of scarcity has not been incorporated into the thinking of growth economists. Nor have they paid sufficient attention to the fact that capital is itself made and maintained from, as well as powered by, natural re- sources. It is hard for a factor to substitute for that from which it is made! And consider yet another oversight. Substitution is reversible—if capital is a good substitute for resources, then resources are a good substitute for capital. But then why, historically, would we ever have accumulated capital in the first place, if nature had already given us a good substitute? In sum, the claim that capital is a good substitute for natural re- sources is absurd.

In reply to these criticisms growth economists point to modern agriculture, which they consider the prime example of substitution of capital for resources. But modern, mechanized agriculture has simply substituted one set of resource flows for another, and one set of funds for another. The old resource flows (soil, sunlight, rain,

manure) were to a significant degree replaced by new resource flows (chemical fertilizer, fossil fuels, irrigation water), not by "capital"! The old fund factors of labor, draft animals, and hand tools were replaced by new fund factors of tractors, harvesters, etc. In other words new fund factors substituted for old fund factors, and new resource flows substituted for old resource flows. Modern agriculture involved the substitution of capital for labor (both funds), and the substitution of nonrenewable resources for renewable resources (both flows). In energy terms it was largely the substitution of fossil fuels for solar energy, a move with short-term benefits and long-term costs. But there was no substitution of capital funds for resource flows. The case of mechanization of agriculture does not contradict the complementarity of fund and flow factors in production, nor the new role of resources as limiting factor.

7 Knowledge is the ultimate resource and since knowledge growth is infinite it can fuel economic growth without limit. Like many, I am eager for knowledge to substitute physical resources to the extent possible, and consequently advocate severance taxes to make resources expensive, and patent reform to make knowledge cheap. But if I am hungry I want real food on the plate, not the knowledge of a thousand recipes on the Internet. Furthermore, the fact that knowledge is naturally depleting while ignorance is naturally renewing makes me doubt that knowledge can save the growth economy. Ignorance is renewable, mainly because ignorant babies continually replace learned elders. In addition, vast amounts of recorded knowledge are destroyed not only by death, but also by decay, fires, floods, bombs, and bookworms. Modern digital storage does not seem to be immune to the teeth of time, or to that new bookworm, the computer virus. To be effective in the world knowledge must exist in someone's mind (not just in the library or on the Internet)—otherwise it is inert. And even when knowledge increases, it does not grow exponentially like money in the bank. Some old knowledge is disproved or canceled out by new knowledge, and some new knowledge is discovery of new biophysical or social limits to growth.

New knowledge must always be something of a surprise—if we could predict its content then we would know it already, and it would not really be new. Contrary to common expectation, new knowledge is not always a pleasant surprise for the growth economy—frequently it is bad news. For example, climate change from greenhouse gases was recently new knowledge, as was discovery of the ozone hole. How can one appeal to new knowledge as the panacea when the content of new knowledge must of necessity be a surprise? Of course we sometimes get lucky with new knowledge, but should we borrow against that uncertainty? Why not count the chickens after they hatch?

8 Without growth we are condemned to unemployment. The Full Employment Act of 1946 declared full employment to be a major goal of US policy. Economic growth was then seen as the means to attain the end of full employment. Today that relation has been inverted—economic growth has become the end, and if the means to attain that end—automation, off-shoring, excessive immigration—result in unemployment, well that is the price "we" just have to pay for the supreme goal of growth. If we really want full employment we must reverse this inversion of ends and means. We can serve the goal of full employment by restricting automation, off-shoring, and easy immigration to periods of true domestic labor shortage as indicated by high and rising wages. In addition, full employment can also be served by reducing the length of the working day, week, or year, in ex- change for more leisure, rather than more GDP.

Real wages have been falling for decades, yet our corporations, hungry for cheaper labor, keep bleating about a labor shortage. They mean a shortage of cheap labor in the service of growing profits. Actually a labor shortage in a capitalist economy with 80% of the population earning wages is not a bad thing. How else will wages and standard of living for that 80% increase? What the corporations really want is a surplus of labor, and falling wages. With surplus labor wages generally do not rise and there- fore all the gains from productivity increase will go to profit, not wages. Hence the elitist support for automation, off-shoring, and lax enforcement of democratically enacted immigration laws.

9 We live in a globalized economy and have no choice but to compete in the global growth race. Globalization was a policy choice of our elites, not an inevitability. Free trade agreements had to be negotiated. Who negotiated and signed the treaties? Who has pushed for free capital mobility and signed onto the WTO? Who wants to enforce US intellectual property rights worldwide with trade sanctions? The Bretton Woods system was a major achievement aimed at facilitating international trade after WWII. It fostered trade for mutual advantage among separate countries. Free capital mobility and global integration were not part of the deal. That came with the WTO and the effective abandonment by the World Bank and IMF of their Bretton Woods charter. Globalization is the engineered integration of many formerly relatively independent national economies into a single tightly bound global economy organized around absolute advantage, not comparative advantage, which assumes capital immobility internationally. Once a country has adopted free trade and free capital mobility it has effectively been integrated into the global economy and is no longer free not to specialize and trade. Yet all of the theorems in economics about the gains from specialization and trade assume that trade is voluntary. How can trade be voluntary if countries are so specialized as to be no longer free not to trade? Countries can no longer account for social and environmental costs and internalize them in their prices unless all other countries do so, and to the same degree. To integrate the global omelet you must disintegrate the national eggs. While nations have many sins to atone for, they remain the main locus of community and policy-making authority. It will not do to disintegrate them in the name of abstract "globalism", even though we certainly re- quire some global federation of national communities. But when nations disintegrate there will be nothing left to federate in the in- terest of legitimately global purposes. "Globalization" (national disintegration) was an actively pursued policy, not an inertial force of nature. It was done to increase the power and growth of transnational corporations by moving them out from under the authority of nation states and into a non-existent "global community". It can be undone, as is currently being contemplated by some in the European Union, formerly heralded as the forerunner of more inclusive globalization.

10 Space, the high frontier, frees us from the finitude of the earth, and opens unlimited resources for growth. In a secular age where many have lost faith in the spiritual dimension of existence, and where the concept of "man as creature" is eclipsed by that of "man as creator", it is to be expected that science fiction might be called on to fill the dead void of space with a happy population of the "scientifically raptured". The spiritual insights of centuries are replaced by technocratic projections of the "Singularity" in which mankind attains the final goal of (random?) evolution and becomes a new and immortal species, thanks to the salvific power of exponential growth in information processing technology. Eternal silicon-based life awaits the new elect who can stay alive until the Singularity; oblivion for those who die too soon! And this comes from materialists who think that they have outgrown religion!

Of course many technical space accomplishments are real and amazing. But how do they free us from the finitude of the earth and open up unlimited resources for growth? Space accomplishments

have been extremely expensive in terms of terrestrial re- sources, and have yielded few extraterrestrial resources—mainly those useless moon rocks that incited thievery by a NASA intern. As for new services, space tourism has provided orbital joy rides to a few billionaires. On the truly positive side of the ledger we can list communications satellites, but they are oriented to earth, and while they provide valuable services, they do not bring in new re- sources. And apparently some orbits are getting crowded with satellite carcasses.

Robotic space exploration is a lot cheaper than manned space missions, and may (or may not) yield knowledge worth the investment to a society that has not yet provided basic necessities and elementary education for many. In such a world political willingness to finance the expensive curiosity of a scientific elite might be less, were it not for the heavy military connection (muted in the official NASA propaganda). Cuts in NASA's budget have led to the hyped re- action by the "space community" in proclaiming a pseudo religious technical quest to discover "whether or not we are alone in the uni- verse". Another major goal is to find a planet suitable for colonization by earthlings. The latter is sometimes justified by the claim that since we are clearly destroying the earth we need a new home—to also destroy?

The numbers—astronomical distances and time scales—effectively rule out dreams of space colonization. But another consideration is equally daunting. If we are unable to limit population and production growth on earth, which is our natural and forgiving home, out of which we were created and with which we have evolved and adapted, then what makes us think we can live as aliens within the much tighter and unforgiving discipline of a space colony on a dead rock in a cold vacuum? There we would encounter limits to growth raised to the hundredth power.

11 Without economic growth all progress is at an end. On the contrary, without growth, now actually uneconomic growth if correctly measured, true progress finally will have a chance. As ecological economists have long argued, growth is quantitative physical in- crease in the matter–energy throughput, the metabolic maintenance flow of the economy beginning with depletion and ending with pollution. Development is qualitative improvement in the capacity of a given throughput to provide for the maintenance and enjoyment of life in community. Growth means larger jaws and a bigger digestive tract for more rapidly converting more re- sources into more waste, in the service of frequently destructive individual wants. Development means better digestion of a non-growing throughput, and more worthy and satisfying goals to which our life energies could be devoted. Development without growth beyond the earth's carrying capacity is true progress. The main ways to develop are through technical improvement in re- source efficiency, and ethical improvement in our wants and priorities. Resource efficiency must be an adaptation to lower resource throughput. So far we have sought efficiency independently of limiting throughput and have consequently run into Jevons' Paradox—better efficiency in using a resource tends to increase the total amount used. If we first limit throughput then we will get efficiency increase as a secondary adaptation; if we first seek efficiency increase we secondarily get Jevons' paradox. Limiting physical growth is necessary to force the path of progress onto development. Since physical growth has become uneconomic one might think that limiting it would not be so controversial! But of course most economists do not admit that growth is, or even could be, uneconomic. They seem determined to avoid discussion of arguments or evidence to the contrary.

CONCLUSION

If growth economists will make an effort to overcome these eleven fallacies, and break their guild's stonewalling silence, then maybe we can have a productive dialog about whether or not what used to be economic growth has now become uneconomic growth, and what to do about it. It was too much to hope that the issue of uneconomic growth would make it into the 2012 election, but maybe 2016, or 2020, ….or sometime?

One can hope. But hope must embrace not just a better under- standing regarding these confusions, but also, at a deeper level, more love and care for our fellow humans, and for all of Creation. I say Creation with a capital "C" advisedly, and not in denial of the facts of evolution. If our world and our lives are not in some sense a Creation, but just a purposeless happenstance—a random statistical fluke of multiplying infinitesimal probabilities by an infinite number of trials—then it is hard to see from where we will get the will and inspiration to care for it. Indeed, our decision-making elites may already tacitly understand that growth has become uneconomic. But apparently they have also figured out how to keep the dwindling extra benefits for themselves, while "sharing" the exploding extra costs with the poor, the future, and other species. Why not, if it is all just a purposeless happenstance? The elite-owned media, the corporate- funded think tanks, the kept economists of high academia, and the World Bank—not to mention Gold Sacks and Wall Street—all sing hymns to growth in harmony with class interest and greed. The public is bamboozled by technical obfuscation, and by the false promise that, thanks to growth, they too will one day be rich. Intellectual confusion is real, but moral nihilism, abetted by naturalistic scientism, may be the bigger problem.

ref_str

1. **Andersen, B., M'Gonigle, M.,** 2012. Does ecological economics have a future? Contradiction and reinvention in the age of climate change. Ecological Economics 84,37–48.
2. **Growth and development:** critique of a credo. Population and Development Review 34 (3) September (Review of Commission on Growth and Development, The Growth Report: Strategies for Sustained Growth and Inclusive Development. Washington, DC: The World Bank, 2008. xiii+180 p. $26.00 (pbk). Available at «http://www.growthcommission.org/ index.php?option=com_content&task=view&id=96&Itemid=169»).
3. **Daly, H.E.,** 2007. Ecological Economics and Sustainable Development. Edgar Elgar, Publishers, Cheltenham, UK (See chapter 11).
4. **Georgescu-Roegen, Nicholas,** 1972. The Entropy Law and the Economic Process. Harvard University Press, Cambridge, MA.
5. **Hicks, J.R.,** 1946. Value and Capital: An Inquiry into Some Fundamental Principles of Economic Theory, 2nd ed. Clarendon Press, Oxford.

IJSURP Publishing Academy

International Journal Of Scientific And University Research Publication

Multi-Subject Journal

Editor.

International Journal Of Scientific And University Research Publication

+965 99549511

+90 5374545296

+961 03236496

+44 (0)203 197 6676

www.ijsurp.com