GLOBALIZATION AND INEQUALITY IN THE ANTHROPOCENE

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> Don't tell us about theory. Economic theory has led us to social failure. Simply look around you.
>
> Jeff Madrick (2011)

Capital and Labour were once useful categories. The centrality and meanings of the terms were reasonably clear in the early days of industrialization in Europe and North America. With the formalization of these concepts in the then fledging study of economics and with changing opportunities for investment and employment a gap between theory and reality began to widen perceptibly. Nonetheless, the longest reigning paradigm in economics sums up production and income distribution as little more than the outcome of a simple relation of capital and labour.

The world has changed and so has economics, but not for the better. That we have not had a paradigm shift in economics is consistent with the hard sociology of knowledge hypothesis. That perspective, developed by Steven Fuller (2003), contends that those who benefit from the practical consequences of a theory, are tireless in their efforts to sustain the life of that theory. Vested interests find it quite profitable to generously support theory with a strong

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'free enterprise' bias which bears handsome financial rewards to them. If one can cloak a theory with a mantle of complexity, its staying power can be extended for as long as possible, if not indefinitely. In the 1960s Joan Robinson spoke of economics as having run off to hide in the thickets of algebra. That was just a way station: today no element of mathematical complexity is missing from the fully-trained economist's tool chest. Levels of complexity have been added to the theoretical edifice, but, like a giant inverted pyramid, the aptness of policy recommendations so derived cannot withstand the slightest whisper of wind.

Comparative Advantage: A Flagship for Obfuscation

In the July-August 2011 issue of *Foreign Affairs*: Michael Spence, co-recipient of the Nobel Prize in Economics in 2001, observed that the economic structure of developing countries "changed in response to the forces of comparative advantage" and that in certain sectors the "U.S. economy continues to have a comparative advantage." 'Comparative advantage' as either an explanation or as a guide to policy is consistently invoked as an immutable principle.

Why continue to assign explanatory power to a concept that springs from an early 19th illustration by David Ricardo about why Portugal would gain from importing cloth from England in exchange for Portuguese wine even though Portugal is (in Ricardo's invented example) the lower cost producer of both goods? The holding power of the theory of comparative advantage owes much to parsimony, to formalization, to repetition and to familiarity. It no doubt owes far more to its considerable serviceability in sweeping aside arguments for restrictions to access to export markets. The power of interests to invoke the Panglossian benefits of opening markets when it is convenient for them can not be overestimated.

If one carefully compares reality with the assumptions incorporated in the theory of comparative advantage, one quickly comes to the conclusion these are two distinct non-intersecting sets. I shall not pretend to give a full account of the shortcomings of the theory. Suffice it to say that the theoretical demonstration of comparative advantage, fondly referred to as the 'Noah's Ark Model', features two homogeneous tradable goods, two countries and two homogeneous factors of production (commonly labour and capital). Prices of both goods and both factors are fully flexible. The model is timeless and reversible and all changes occur instantaneously. Both countries produce both goods before and after trade. To focus on 'labour', it is worth noting that here as elsewhere labour has no age, no gender, no ethnicity and no physiological needs. In short: no humanity. Thorstein Veblen summed up well economic man (labour) in 1898:

> The hedonistic conception of man is that of a lightning calculator of pleasures and pains who oscillates like a homogeneous globule of desire of happiness under the impulse of stimuli that shift him about the area, but leave him intact. He has neither antecedent nor consequent. He is an isolated definitive human datum, in stable equilibrium except for the buffets of the impinging forces that displace him in one direction or another. Self-imposed in elemental space, he spins symmetrically about his own spiritual axis until the parallelogram of forces bears down upon him, whereupon he follows the line of the resultant. When the force of the impact is spent, he comes to rest, a self-contained globule of desire as before. Spiritually, the hedonistic man is not a prime mover. He is not the seat of a process of living, except in the sense that he is subject to a series of permutations enforced upon him by circumstances external and alien to him.

Nor is there a spatial dimension to either of the countries in the two-country comparative advantage model. Hence, what Gunnar Myrdal (1957) spoke of as the backwash effects which prejudice poor regions and poor countries and benefit those gainers who are distant is not a possibility of the model. Forgotten is the admonition of Paul Samuelson (1949) at the conclusion of his theoretical demonstration of the possibility of the absolute equalisation of factor prices: "In the face of these hard facts [i.e., reality] it would be rash to consider the existing distribution of population to be optimal in any sense, or to regard free trade as a panacea for the present geographical inequalities."

An Optimum Policy Area

In the middle of the 19th century, long before one could possibly have thought of the world being a single integrated market, John Stuart Mill spoke of the eventual adoption a single world currency. He wrote in his *Principles of Political Economy*:

> So much of barbarism, however, still remains in the transactions of the most civilized nations that almost all independent countries choose to assert their nationality by having to their own inconvenience and that of their neighbours, a peculiar currency of their own.

Today we have the theory to support the case for a single world currency, but national sovereignty still stands in the way. The citation for the 1999 Nobel Prize in Economics awarded to Robert Mundell spoke of "his analysis of optimum currency areas," which are regions characterized by integrated factor and product markets. According to Mundell (1961), unified markets would benefit from having a single currency. Using Mundell's concept, Ronald McKinnon (1963) referred to the world as being an optimum currency area and Charles Kindleberger (1967) spoke more broadly of optimum policy areas.

The continued existence of many different currencies in a relatively unregulated environment has been associated with the hyper-mobility of financial transactions. As early as 1972 James Tobin proposed a tax on currency transactions in order, as he put it, to throw sand in the wheels of international finance. Despite considerable enthusiasm from different quarters for some version of what is now referred to as a Tobin Tax, the closest we have come to the implementation of a form of his proposal are current initiatives in the Euro area to implement a financial transactions tax. Since Tobin first proposed his tax, many proponents have focused on the apparent significant revenue raising nature of the Tobin Tax, rather than the purpose he intended for it of reducing market volatility by diminishing the volume of speculative transactions. Indeed, were his tax to serve as a deterrent to speculative currency transactions, resulting revenues would be minimal. This would appear to have been what he anticipated as he devoted very few words to the size or the use of transaction tax revenues.

For Tobin (1994), the exchange transactions tax was a second best solution. His first best preference was for a world currency, consistent with writing on the logic of the world as an optimum currency area:

> A permanent single currency, as among the 50 states of the American union, would escape all this turbulence. The United States example shows that a currency union works to great advantage when sustained not only by centralized monetary authorities but also by other common institutions. In the absence of such institutions, an irrevocably unique world currency is many decades off.

In a world that is increasingly interconnected, where financial flows truly know no bounds, where ideas freely flow (with the possible exception of North Korea), where trade in goods is largely free of impediments, and most nations try to achieve a cost advantage, the absence of either world level policy and/or generalized policy harmonization leaves the people of the world to be pawns of what Veblen called the Vested Interests. The burden of maintaining the pretense of sovereignty in the context of a generalized race to the bottom falls heavily on the common people. The response to the possibility of jobs and production moving offshore is often to cut taxes, cut wages, and/or divert public funds to subsidies to the firms that have one foot out of the door. These rear guard actions are misguided *sauve qui peut* responses to a global collective action challenge.

The countries of Western Europe reeling from the effects of two major wars on their territories and the Great Depression in little more than three decades slowly took steps to replace enmity with cooperation. Throughout the process there have been limits to what nominally sovereign countries were willing to cede to a supranational entity. The resistance of the member countries to cede significant revenue raising powers to a central authority made for a fair weather union, as has been clearly demonstrated during the current global financial crisis.

In considering what might be an appropriate budget for the central authority for a united Europe a Study Group chaired by Sir Donald MacDougall reported in 1977 to the Commission of the European Communities on the role of public finance in European integration. Timothy Bainbridge provided a succinct summary:

> When the report was written, total spending by the Community institutions was about 0.7 per cent of the Community's gross domestic product (GDP). 'Pre-federal integration' meant raising the latter figure to between 2 and 2.5 per cent. A 'small' Community public sector was reckoned to be from 5 to 7 per cent, and a 'large' something approaching 25

> per cent of GDP. On this calculation, the European Union is still well short even of the 'pre-federal' stage: in 2000, total union expenditure was estimated at about 1.08 per cent of the Union's GDP.

Without a sizable central budget and a commitment to increasing policy coordination as integration of the European Community progressed, a race to the bottom took place within Europe, as shown most notably by a growing divergence in corporate profit tax rates, with the Irish rate having been reduced to 12.5% while rates in Belgium, France, Germany and Italy, for example, are above 30%. Textbook discussions of integration insist that higher levels of economic and political integration require higher degrees of coordination, particularly for the case of the adoption of a common currency. The insights of Tobin, McKinnon and others have been swept aside by the influence of the powerful and by the delusions of safeguarding national sovereignty.

Income Distribution: Kuznets Reversed

For much of the history of economics, income distribution was a non-issue. The relevant distribution was the functional distribution: the shares of a firm's product received by capital and labour. Historically this was a microeconomic concept, not a macroeconomic one. Basic questions on the relation of capital, labour and (functional) income distribution in neoclassical microeconomics were settled matters. In the mythical world of free markets, where all that is relevant is assumed away, everything fell neatly into place. Homogeneous capital and homogeneous labour were each compensated according to its contribution to marginal revenue, which, in turn, established the functional distribution. And that basically was all there was to that. Any deviation from that outcome resulted from market imperfections (such as were caused by meddlesome governments or obstreperous groupings of workers). Policy was clear: eliminate the imperfections. Indeed, in the absence of national income accounting until the 1930s, the personal or household income distribution was not even a meaningful consideration.

Concentrations of income and wealth are nothing new, but the magnitude and the ease of accumulating and the acceptance of enduring inequality is new. Our current circumstances of growing inequality represent the fulfillment of a utopian vision, turned dystopian: accumulation of wealth was expected to bring with it a comparable increase in the wealth of the community through productive investment. The rhetoric denied the extent to which entire societies could fall under the thrall of destabilizing inequalities of income and power.

This is not the first time that income has become concentrated and not the first time that responses have been crafted. Leveling arrangements have been common in many societies: the potlatch, elaborate marriage celebrations, financing the building of churches or mosques. Where individual were slow to share with the community, estate taxes and steeply progressive income taxes were enacted. All have served to varying degrees as unifying devices, as have social welfare programs, free public schooling and even universal military service. Fear of the hungry masses played a role in establishing early welfare programmes. Better to share a carefully measured portion of one's gains, however gotten, than risk it all in a violent upheaval. That restraint is scarcely to be found in the 3rd Millennium.

When discussion turns to the household distribution, the most famous proposition is the inverted U pattern hypothesized by Simon Kuznets (1955), who was one of the pioneers in helping to shape the national income accounts. Kuznets advanced the notion in a most tentative way that changes overtime in the Gini coefficient would likely sketch an inverted U pattern. Indeed, this has been corroborated for the immediate post-World War 2 decades. Reaction to the hardships of the years of the Great Depression and the War brought the widespread growth of the welfare state and a consensus favoring active governments.

Greed, slowly at first, but then accelerating, turned the inverted U income distribution pattern into something akin to a wave motion as Gini coefficients increased in the latter decades of the 20th century after declining in most of the industrial countries in the decades which immediately followed the end of the Second World War. As Piketty and Saez wrote in 2003: “Today, the Kuznets curve is widely held to have doubled back on itself, especially in the United States.” At the time, they were of the opinion that “a new industrial revolution has taken place, thereby leading to increasing inequality, and inequality will decline again at some point, as more and more workers benefit from the innovations." I doubt that would that still be their judgment today as to the cause of increasing inequality.

Governments everywhere were prompted by their financial and business elites to preserve competitiveness by reducing tax rates. Rather than behave like several interested oligopolists who recognize the importance of not breaking ranks, governments have enaged in a race to the bottom by cutting tax rates and bases. Among the effects of inevitably reduced government revenues are the eroding of welfare programmes, social solidarity and political integrity. The growth of prison populations, impoverishment of working classes and weakening of the ability of governments to provide stimuli have also resulted. On the other side of the coin of inequality are gated communities and the vertiginous growth of the private security industry. All of these things have been happening in the extreme in the United States.

Income distribution data are probably the least reliable statistics at our disposal, particularly with respect to high incomes. Nonetheless, even a substantial underestimate conveys a picture of growth of income inequality since the beginning of the 1980s. The multiple adverse effects of the escape from taxation have triggered serious research to build databases on the weakest link in national data: on the nature and extent of inequality at the top of distribution. Pathbreaking work has been done, much of which is summarized on "The World Top Incomes Database." (http://topincomes.g-mond.parisschoolofeconomics.eu). Table 1 illustrates clearly that the concentration at the top of the income distribution in the United States in 2006 was the highest since the 1920s. Not shown in Table 1 are the figures for total income share including capital gains. In 2006 these were: top 1%, 22.8%; top 0.01%, 5.5%.

Table 1: United States, Top Income Shares

Year	Top 1%	Top 0.01%	Year	Top 1%	Top 0.01%
1916	18.6	4.4	1966	8.4	0.6
1926	18.0	2.5	1976	7.9	0.6
1936	17.6	2.2	1986	9.1	1.0
1946	11.1	0.9	1996	14.1	2.0
1956	9.1	0.7	2006	18.1	3.3

Note: Estimates exclude capital gains; fractiles are defined by total income excluding capital gains.

Source: Alvaredo, F., Atkinson, A., Piketty. T and Saez. E. *The World Top Incomes Database*, http://topincomes.g-mond.parisschoolofeconomics.eu [Viewed May 1, 2013].

With more open access to data and with the posing of differing questions we have a clearer idea of the worldwide skewing of income and wealth distributions to favor the top of the distribution. Recent data have provided an indication of the extreme concentration of income and wealth at the top in both country distributions and the world distribution. Milanovic (2002) was one of the first to estimate world distribution by household, rather than by country. He came up with some of the highest measures of income distribution that have been seen: a Gini of 66% for 1993 when using purchasing power parity adjusted data and 80.5% when using unadjusted data. No matter how great estimates of concentration of income and wealth at the top of the income distribution may be, they are likely to all be underestimates owing to the role of tax avoidance and evasion. Household surveys, which Branko Milanovic relied upon, are notoriously unreliable for those at the top who are unlikely to be among those surveyed. However, as the authors of the Top Income Series observe "Like all economic data, they measure with error the 'true' variable in which we are interested."

Disaggregated data can be startlingly instructive in a context of major inequality of income and opportunity. For example, during the very modest economic recovery in the United States from 2009 to 2011, aggregate data show that average real income per family grew by 1.7 percent. An examination by Emmanuel Saez (2013) of how that increase was distributed showed: "Top 1% incomes grew by 11.2% while bottom 99% incomes shrunk by 0.4%."

Does inequality as reflected in extreme wealth matter? Let me count the ways: extreme wealth compromises political democracy, destroys societal restraints, compromises public truth, compromises individual honesty, compromises community and solidarity, compromises livelihood, compromises domestic tranquility, compromises quality, and compromises sustainability. Harvey Kempf (2007), following the century old formulation of Veblen (1899), sees the profligate consumption patterns of the rich contributing mightily to the destruction of the planet as their usage spreads through the income pyramid. Each endeavors to emulate the consumption pattern of those with incomes above their own. This spreads to all worldwide on a reduced scale as one moves down the income pyramid. The rich provide the model and others emulate.

From Job Benefits to Social Protection Floor

workers aren't bushels of wheat . . . they're human beings

Paul Krugman, Feb 18, 2013

During the age of industrialization, the focus of attention was on jobs in industry. We tracked the growth in the numbers of those employed, their remuneration, their hours and working conditions. We divided the world into industrialized countries and developing countries, with industrial employment as the hallmark of success. Since the 1970s that has changed markedly: while industrial value added may be the largest contributor to gross output, the number of those employed in production fell relatively to those carrying out administrative tasks within firms known for their production of tangible items. More recently all employment in industry has declined: both production line and front office functions.

The success of opening trade has been inversely proportional to the declining employment in industries where jobs have moved overseas. In the case of the US, the first round of migration of employment from antiquated factories and unionized workers to new factories with cutting edge technologies and effort saving workplace layout and non-unionized workers was from the northeast and mid-west to the south and west. Countries whose outdated factories were destroyed during the Second World War were able to recapture a competitive advantage by rebuilding modern, efficient factories. In the same period US firms recovered competitive advantage by abandoning 'rust belt' facilities and simultaneously escaping from unions and from higher taxes. As the initial moves weakened the sense of place loyalty and local citizenship, the eventual shift to offshore production carried no qualms of abandoning a constituency.

The change has given rise to books whose very titles tell the story, such as Jeremy Rifkin's 1995 *The End of Work: The Decline of the Global Labor Force and the Dawn of the Post-Market Era* and Guy Standing's 2011 *The Precariat: The New Dangerous Class.* Many of the skills of yesterday's craftsmen, are now embedded in chips that provide the guidance for production. Policy discussions tenaciously cling to a dream about renewed growth of industrial employment, but decline of the industrial labour force is like the decline of the agricultural work which preceded it. The truth is that while there may be newly created industrial jobs in the global north, the required skills and educational attainment asked of industrial workers today are often substantially beyond those of workers who were displaced earlier. The siting of new production is now a question of where in the world it should be. We are no longer in a world of steamships and cable transfers of information. In the meantime, jobs in service activities have mushroomed everywhere in the world. Yet even there, continuous new developments of information technology are eliminating jobs. Conditions in the 'services' can range from extreme insecurity to well-remunerated jobs requiring high cognitive abilities.

The realities of increasingly interconnected human activity have given rise, inter alia, to writings calling for national social protection floors for all. As both jobs and job related benefits have been disappearing, a countervailing discourse has been occurring. The Universal

Declaration of Human Rights which was endorsed by the United Nations General Assembly (1948) is increasingly being invoked on behalf of those who have not realized its promise. The latest development in this long march which has included in 1966 the International Covenant on Economic, Social and Cultural Rights and the International Covenant on Civil and Political Rights is a 2011 Report of the Social Protection Floor Advisory Group convened by the ILO with the collaboration of the WHO and chaired by Michelle Bachelet (former President of Chile) Their report *Social Protection Floor for a Fair and Inclusive Globalization* essentially affirms that social support provided by the state is a right. This a critical affirmation in a world in which benefits derived from work are not widely available or even adequate. Add to the current context the continuing displacement of labour by robotics and unknowable effects as the Anthropocene Age advances and the need for a radical review and vast shift in the nature of the conversation about "Labour Force Dynamics" appears urgent. The Bachelet Group report has aimed to fill the gap. The Report calls for each nation to devise a set of policies which would constitute a social protection floor. In particular, the Report urges the G-20 countries to set the example by strengthening and extending their existing sets of social protection floor policies.

The strength of the Group's report is that it obtained the consensus from the United Nations System Chief Executives Board for Coordination (CEB). The CEB has 29 members: the Secretary-General, who serves as Chair, and the heads of 28 UN member organizations, including the World Bank and the International Monetary Fund. Input from an IMF team, in particular, judged that most developing countries would be able to self finance social protection floors, except for a few who would still need development aid for that purpose. In the second decade of the new millennium, when people increasingly recognise that we now live in a world which is interconnected in almost every imaginable sense, the time has come for world level initiatives that aim at convergence rather than competition.

The promise of automation and robotics is nothing less than the emancipation of each and every one of us to be truly human: that is to give full expression to our empathic selves, to be exposed to possibilities which we may pursue as our inclinations dictate. The shift should be from labour market policy to a human fulfillment strategy to support in all the fullest expression of our humanity. Shaping true world citizen with rights and obligations that span national boundaries is one of the key challenges of our times.

Citizens of the World, Unite!

Democracy and capitalism have both been hacked.

Al Gore (2013)

Gore's diagnosis that the institutions of governance that offer the promise of equal opportunity and protection of the rights of all have been compromised is certainly not unique to our time. Adam Smith probably said it best in the Wealth of Nations when he spoke about "the monopoly which our manufacturers have obtained against us":

> This monopoly has so much increased the number of some particular tribes of them that, like an overgrown standing army, they have become formidable to the government, and upon many occasions intimidate the legislature. The Member of Parliament who supports every proposal for strengthening this monopoly is sure to acquire not only the reputation of understanding trade, but great popularity and influence with an order of men whose numbers and wealth render them of great importance. If he opposes them, on the contrary, and still more if he has authority enough to be able to thwart them, neither the most acknowledged probity, nor the highest rank, nor the greatest public services can

> protect him from the most infamous abuse and detraction, from personal insults, nor sometimes from real danger, arising from the insolent outrage of furious and disappointed monopolists. (Adam Smith, 1776, Book IV, Chapter 2)

By comparison, Karl Marx and Friedrich Engels (1847) in the Manifesto of the Communist Party, summed up the state of the polity and society in more sweeping terms:

> the bourgeoisie has at last, since the establishment of Modern Industry and of the world market, conquered for itself, in the modern representative State, exclusive political sway. The executive of the modern state is but a committee for managing the common affairs of the whole bourgeoisie.

And: "The bourgeoisie, wherever it has got the upper hand, has put an end to all . . . idyllic relations . . . and has reduced the family relation to a mere money relation."

Karl Polanyi observed almost one century later in his *The Great Transformation*:

> . . . a self-adjusting market . . . could not exist for any length of time without annihilating the human and natural substance of society; it would have physically destroyed man and transformed his surroundings into a wilderness.

It is time to recognize that not only do we have a single world 'market', we have as well a single world ecosystem. There are, of course local idiosyncrasies, but our circumstances cry out for mutually reinforcing responses that narrow the differences between jurisdictions.

The quest for human rights must name and shame, must speak out loudly. Labour is a subset of our common humanity and quest for well-being. In the extension of rights as in scientific principles, parsimony should be a basic principle. Arrangements should be shaped that provide a maximum of freedom, that enhance life chances, that in a real sense leave none behind by recognizing and accommodating human diversity. We all have a place on this planet and all have an entitlement, insofar as no one is a self-made person. We are all products of our environments, of our socialization, of the panoply of our experiences. The path for all is to the full expression of humanity and a right to acquire competence.

The 21st Century must be about the federated citizen, in his/her multiple associations in his/her immediate entourage(s), to the neighborhood through the many levels of the global hierarchy, to the level of world citizen with portable rights, some immutable and some reflecting the values of a particular jurisdiction or organization, consistent with the issue specific, ever shifting, principle of subsidiarity.

Revolution in the South / Discourse Change

"Revolution in the South" is the subtitle of a work which describes the spread of cash transfer programmes in the Global South. The 2013 *Human Development Report* of the United Nations Development Program bears the subtitle *The Rise of the South*. For at least one decade we have heard prominence being given to the BRICS: Brazil, Russia, India, China and South Africa. And from another perspective, the OECD has added to its ranks South Korea (1996), Mexico (1994) and Chile (2010). We may well be in the midst of a change of the global hegemon. The United States emerged from the Second World War clearly as the dominant economy in the world. Remnants of British dominion over global finance and territory still remained, but the shift was indisputable. Joseph Schumpeter (1950) pinpointed the sclerosis of institutions and spoke of creative destruction. The federal government of the United States has reached a point which has charitably been described as gridlock, thanks in part to a Constitution which, whatever its strengths, was fashioned for the late 18th century. Ironically, numerous worthy practices, which have been resisted in the United States itself, have been successfully implanted in the global South. When the good intentions of a hegemon can not be translated into a consistent set of action, a shift of influence on the global scene can be seen to be emerging.

It is in the Global South where responses to the challenge of the Anthropocene are occurring. Christiana Figueres, the head of the United Nations Framework Convention on Climate Change (UNFCCC) has argued that the countries of the world must make haste on their own, without waiting for global agreement: "Nothing is going to be agreed internationally until enough is legislated for domestically,"[1] And it is indeed some of the southern countries that are proceeding to do so. The UNDP's *Human Development Report 2013: The Rise of the South: Human Progress in a Diverse World* makes the point specifically about the new dynamics in the the 'South':

> The rise of the South demonstrates that the world has become more diffuse and cross-connected. One consequence is that rather than looking to the North for inspiration, developing countries are looking to their peers in the South for appropriate development models. Here, rather than seeing a sterile menu of ideological options, they can examine what has worked, under what circumstances, and choose the most appropriate tools. (p. 119)

The Anthropocene: The Human Age

> Real power lies in today being able to will common global laws rather than in asserting individual national sovereignty.
>
> Benjamin Barber (2003)

While the suggestion that the Holocene Epoch (which extended over almost 12,000 years) is over and that we now live in the Anthropocene appears to have first been suggested by Paul Crutzen near the start of the current millennium, the *Economist* and *National Geographic* magazines both played a role in introducing the term into common usage. The former did so with a June 2011 account accompanied by an illustrated cover announcing "Welcome to the Anthropocene". The latter in a March 2011 article "Enter The Anthropocene -- Age of Man"[2] written by Elizabeth Kolbert, the author of a 2006 book *Field Notes from a Catastrophe*. Simply put, we are altering the planet at an unprecedented pace in a way that is already measurable and even noticeable to untrained observers.

Worse yet, natural processes have long lead times. Were we to abruptly stop the use of fossil fuels tomorrow, we might be able only to slow somewhat the pace of change, but not the direction. Unpredictable extreme weather events are already occurring. At the15th Conference of the Parties to the United Nations Framework Convention on Climate Change in December 2009, some observers were chanting 1.5°, survive; 2.0°, genocide; 2.5°, suicide. An NGO formed by Bill McKibben is simply called 350.org, the maximum parts per million (ppm) level of atmospheric CO2 consistent with maintaining our planet habitable. He and his followers, including leading atmospheric scientist James Hansen, insist that no further CO_2 should be discharged into the atmosphere. Yet we are scheduled to cross the 400ppm threshold in May 2013. This is likely to assure that a global average temperature increase of +2.5°C will eventually be reached. In the apparent hope of sounding an alarm, a recent report published by the World Bank bears the title *Turn Down the Heat: Why a 4°C Warmer World Must be Avoided*.

Community engagement and restraining excess are two sides of the coin of our very survival in the anthropocene. The overwhelming scientific consensus has not yet been able to unite the world in undertaking concerted, coordinated, comprehensive responses. That is the supreme challenge for us all. A future where growth is predominantly non-material and where innate human needs are nurtured may well be the only path to sustainable development which addresses the social, the environmental and much transformed 'economic' ends.

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Footnote

[1] http://www.bloomberg.com/news/2013-01-14/un-s-figueres-says-self-interest-must-drive-climate-laws.html. [cited May 8, 2013]