

Toward a changed economy – looking backward and forward*Neva Goodwin*

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When considering a major economic transition it is useful to consider historical precedent. As we look back to the last comparable transition, the first Industrial Revolution, we can see that the complex emerging problems facing the human race are, ironically, the result of great human achievements. Over the last 250 years there has been outstanding progress in many aspects of human well-being. Much of this has resulted from the great increases in labor productivity due to innovations in technology, infrastructure, management, and institutions. However at the outset of the Industrial Revolution it was not at all obvious *whose* well-being would be enhanced by this increased productivity, or in what way. The ability to produce ever more goods and services could have tended toward any of three extreme results:

1. The increased output could be absorbed solely by elites, as had usually been the case in the past. Perhaps the number of the elites would grow, but the majority of the people would continue to consume only enough to survive.
2. The growth in output could be accompanied by a widespread growth in income, and hence in consumption.
3. People who could produce more per hour might simply work fewer hours. Consumption growth would be restrained by increased leisure and lower national output.

In the United States, and most (but not all) other advanced countries, option 2 was widely adopted.¹ The key to option 2 is the creation of a consumer-oriented society: *what is produced must be purchased*. As long as there is ready-made demand for everything the producers make, there is no problem. When demand lags, they must persuade consumers that they want more.² If the producers fail to do this, firms will collapse and jobs will be lost. Lost jobs means lost income, which means a reduction in what can be purchased. If this occurs on a macroeconomic scale, the output of the whole society declines, and society experiences the suffering associated with recession or depression. And now, of course, this mechanism operates in a global system, where the workers of many other countries also depend on the American consumerist ethos.

The growth in labor productivity that accompanied the Industrial Revolution was based on many things; cheap, available energy was a major element. Now, because of the previously unsuspected relation between CO₂ emissions and climate, the huge dependence on fossil fuels has become a serious weakness in the global economic system. Sooner or later (and,

anticipating the costs of adapting to climate change, we should hope for sooner) fossil fuel use will decline. Most likely this will occur because of rising prices for oil, gas and coal. These could be caused by any or all of the following: political disruptions of supply, oil-field depletion with rising costs of extraction, or national or international regulation (e.g., carbon taxes, or a cap-and-trade system). Few people are optimistic enough to believe that alternate, sustainable energy sources will become available in time to take the place of fossil fuels without any significant disruption. New technologies for producing energy will also require new systems of distribution, and many types of machinery of all types will have to be retrofitted or replaced to use the new systems.

Thus energy, overall, is likely to be more expensive during the period of transition – which could last a few years, or a century. The relative prices of many goods and services will alter dramatically: those whose production takes longer to adapt to the new circumstances will become relatively more expensive. Increased energy costs will ripple throughout the economy, raising other costs³. Moreover, it will be necessary to divert large amounts of available effort and resources to adaptation – more so to the extent that we fail, now and in the future, to take effective action to mitigate climate change.

Given these costs and requirements, the ability of the world's economies to produce consumer goods may cease growing, and may even, for a while at least, shrink. If that occurs, an urgent question is: *Who will consume less – those who are now the major consumers, or those whose consumption is already too low to satisfy basic needs?*

Climate chaos creates such dramatic dangers that it may provide an opportunity for reforms in thought and action that have previously been too uncomfortable to undertake. In addition to the suggestions already made in this paper, the following are some additional changes in economic behavior and economic theory that will be needed to create a more resilient society.

First, massive shifts in *investment priorities* will be needed to:

- Develop renewable energy sources;
- Develop sustainable technologies for the activities involved in production, transportation, domestic life, entertainment, etc.; and
- Develop methods of restoring productivity to land and water areas.
- Rebuild cities to include public transportation, low energy use buildings, and excellent public amenities, with the triple goals of improved livability, cost control, and reduced environmental impact.
- Replace and (where possible) withdraw toxic substances that have, over the last century, been introduced widely throughout the world's ecosystems and the bodies of living beings, including humans. Mental health depends to a significant extent on physical health; both must be supported in populations that will need intelligence, knowledge, will, and social cohesiveness to address the mitigation and adaptation challenges ahead.
- Research and planning are needed to anticipate where, in different economies, the requirement to reduce climate-altering activities suggests a shift toward relatively more human

inputs, and less material and energy inputs, in the production of marketed or non-marketed goods. Technology and “information intensive” human inputs should be substituted for energy and materials.

Second, *political/institutional changes* will be needed to:

- Increase the power of entities that represent the social interest vs. those (such as corporations, in the existing system) that pursue a narrow or short-term interest.
- Create appropriate means of managing assets which are defined as “common wealth.”
- Create a substantial floor under the political, economic, and decision-making power of individuals and communities, e.g. through legal instruments such as trusts, charters, and ordinances.
- Intensify efforts to move toward more equal power and access to resources, within nations and among them. Special efforts should be made to improve the quality of education for all, while equalizing the quality of education for the rich and the poor.

Finally, necessary *cultural changes* will likely include:

- Recognition of and adaptation to changing demographics. The rich countries, which must take leadership in significant aspects of the development of new, sustainable patterns of economic activity, will simultaneously need to cope with a growing proportion of elderly people, with their particular medical and social needs, along with a shrinking proportion of people in the formal workforce. If an aging population means fewer job-seekers, will there also be fewer jobs? What does this mean for the standard of living of those who are, and those who are not, working at formal jobs? How can societies respect and make use of the potential contributions of the elderly?
- Changing attitudes toward work and leisure, along with possibly changed definitions of “work” or “a job,” will likely result from the demographic changes, and may also be necessary concomitants to an economy with reduced throughput. Decreased labor income relative to the value of energy and materials may revise expectations of the proportions between marketed and non-marketed goods enjoyed by households. (This carries the danger of counteracting the progress made in gender equality, since in many societies women have traditionally been the major providers of non-marketed goods and services.)
- Building on the findings of hedonic psychology, economics, other social sciences, and the public in general, need a revised understanding of what contributes to well-being. The culture of consumerism includes beliefs that “more is better,” “happiness can be bought,” etc. There is much evidence that these beliefs are false, but they are actively fostered by the many businesses that perceive a consumerist culture as in their interest.
The world’s socio-economic systems are likely on the brink of another period of transition – one that is likely to occur even more rapidly than the original Industrial Revolution – and humanity again faces important choices. One choice relates to the issue that classical economists used to refer to as “the division of society’s product.” This was the choice between options 1 and 2, as described at the beginning of this section. That pair of options posed the question: As economies become increasingly capable of producing a quantity of output that is ever more above the bare minimum needed for survival, will the “extra” go mostly to elites (the

owners of capital resources), or be more widely distributed among workers? This question becomes even more urgent if the “extra” begins to shrink, as it could do with rising energy costs. Unequal sharing of a growing pie may not be too painful, but if the pie is shrinking the fate of those with a smaller share to begin with can become dire indeed.

Fourteen years ago I wrote a paper describing the “nightmare scenario” ...in which redistribution does not occur; ecological collapse hits the poor soonest and hardest, causing third World famine and disease on a scale surpassing anything ever experienced by our species; and the wealthy countries learn enough from that to reform their ways – not in terms of helping the poor, but in reducing their own throughput. (Goodwin, 1994)

What I left out of this nightmare scenario was the “gated community” aspect that is already appearing within countries and on their borders, as individuals, communities and nations consciously or unconsciously lay the groundwork for the use of violence by the rich to repel a possibly violent influx of the desperate. Equality was mentioned above as a requirement for resilience. This is true on global as well as on local levels. The rich nations and people of the world face a stark choice: to give the assistance required to increase resilience among the poor – or to let them die, or shoot them when they arrive at the gates. If morality is not sufficient to make the choice obvious, there is also the consideration of how unpleasant it would be – even for the rich – to live in a such a world.

¹ This was not a single decision; it emerged over several centuries, with the outcome in the United States, for example, still in doubt in the early part of the 20th century, when (prior to the Great Depression) labor unions were still arguing as much for leisure as for income. Latin American countries have suffered from a tilt toward Option 1. Western Europe has shown more of a preference for option 3 than has the U.S.; France has gone the farthest in attempts to institutionalize option 3 through legislation.

² Of course, governments, as end users of many products, can also be “consumers.” Modern producers have become increasingly effective in the lobbying to government agencies which is the equivalent of advertising to consumers.

³ Rising energy costs, for a few decades at minimum, seem highly likely under any mitigation scenario. The cost of materials might also rise, because higher energy costs will likely add significantly to the cost of extracting raw materials – or of recycling used materials. However, a downward trend in the costs of raw materials, and many material products, has persisted for most of the last 50 years, and many observers expect this trend to persist.