

GLOBAL DEVELOPMENT AND ENVIRONMENT INSTITUTE

WORKING PAPER NO. 14-01

Prices and Work in The New Economy

Neva Goodwin

April 2014

Tufts University
Medford MA 02155, USA
<http://ase.tufts.edu/gdae>

Abstract

The impetus for this paper is the urgent need is to figure out how a non-growing – even a shrinking – economy may be able to provide human well-being while beginning to restore the health of the natural world. Twentieth century economic theory is not well able to conceptualize this problem, especially since it sees growth as necessary for jobs, jobs necessary for income, and income necessary for well-being.

To unwind this chain will require some radical changes in economic theory. The theory must focus on the final goal of human well-being, in the present and the future, prior to the intermediate goals of growth, financial wealth, or the maximization of consumption. Equally critical, and difficult, is to find ways for economic theory to take account of human values, and identify the places where they are more salient than market values, or prices.

This conceptualization must be done in a context where we have even more reason than usual to doubt our ability to predict the future. This is because the competing forces of technological progress, on the one hand, and the cumulative human impacts on the natural world, on the other, present us with some dramatically diverging possibilities for the future of work.

In one possible scenario, technological advances make more and more jobs obsolete: the productive resources of the economy continue to be able to turn out a high level of material goods and services, but fewer and fewer people are needed to keep these processes going. The resulting “technological unemployment” could create massive poverty – unless societies can devise ways of sharing the wealth.¹

The other possible future path is one in which, while the economy retains (with the normal slow decay) the store of capital goods (including technological and other knowledge, as well as information and transportation systems) that have been amassed in the last few hundred years, the system encounters serious constraints from the depletion and/or degradation of the natural resource inputs of energy, water, biota, minerals, and other materials. In this case the relative value of material (including energy) inputs is likely to rise relative to the value of human labor – a trend that would be the opposite of what has obtained quite steadily since the onset of the Industrial Revolution. A likely result of this reversal would be a general reduction in labor income, as well as an overall reduction in economic activity, as measured by GDP.

¹ One such proposal for sharing the wealth will be set forth in a forthcoming paper, “Basic Income for a New Economy.”

Prices and Work in The New Economy

Neva Goodwin²

Introduction

In his extraordinarily prescient paper, “Economic Possibilities for our Grandchildren” (1930), John Maynard Keynes referred to the struggle for subsistence as “the economic problem,” and anticipated that, due to the rapidity of technological change, making labor ever more productive, “in our own lifetimes ... we may be able to perform all the operations of agriculture, mining, and manufacture with a quarter of the human effort to which we have been accustomed.” By the time of his generation’s grandchildren (or around 2030) he predicted that “the economic problem” would be solved.

In fact, this prediction has already been proved right: Humanity does have the capacity to feed, clothe, house, and provide basic health care for all its members. That we do not do so – that a quarter of the human population still lives in situations of abject poverty – is not because we are technologically incapable. Rather, it is because the prevailing economic systems provide some, but not all, people with the means to be highly productive, in the sense of producing much that is valued in the world’s markets; while others can barely produce enough for their own needs, or work at jobs whose output is rewarded with very low pay.

Karl Marx proposed a very appealing resolution to this, in the slogan “from each according to his ability, to each according to his needs.” Socialist or communist regimes that set out to translate this slogan into practice during the 20th century were on the whole less successful than the capitalist alternatives. However, as we move farther into the 21st century, capitalist systems are also showing serious flaws and strains. Many contemporary economies serve the demands of the rich but not the needs of the poor. At the same time the world’s economies have overshot the capacity of the ecosphere to absorb the wastes they generate, and now face catastrophic consequences, unless they make a dramatic change in course.

The largest need is to figure out how a non-growing – even a shrinking – economy may be able to provide human well-being while beginning to restore the health of natural world. Twentieth century economic theory is not well able to conceptualize this problem, especially since it models well-being as dependent on income, income dependent on jobs, and jobs dependent on growth.

To unwind this chain will require some radical changes in economic theory to allow it to incorporate already existing economic realities. The theory must focus on the final goal of human well-being, in the present and the future, prior to the intermediate goals of growth, financial wealth, or the maximization of consumption. And it must find ways to take account of human values, and identify the places where they are more salient than market values, or prices.

² An earlier version of this paper will be published in a volume of collected papers from the Imagine Conference, organized jointly by Saint Mary's University in Halifax and the Desjardins credit unions system October 7, 2012, Quebec City, Canada. Titled *Co-operatives in a post-growth era: Towards co-operative economics*, the book will be published in fall, 2014

This paper will focus especially on the challenges involved with the topic of *work in the 21st century*. It will look at both paid and unpaid work, giving the latter the attention it deserves, but that it does not receive in a market-focused theory. It will consider the issue of technological employment that Keynes raised (more extended excerpts from his “Economic Possibilities for our Grandchildren” are included in the Appendix.) It will also consider the possibility that resource constraints will, in fact, reduce labor productivity. It will outline scenarios relating to different possibilities for future labor productivity and human well-being.

Sections 9 to 11 will propose ways of changing our economy to address the real dangers and opportunities as well as the theoretic failings that are outlined in the first half of the paper.

2. A complex of critical issues for understanding the possibilities of a new economy

Much of economic theory is based on the fact that prices affect our lives in many ways. People tend to associate this fact with two beliefs: prices are set by markets: and only markets *should* set prices. I will argue (in Section 7, below) that markets, in fact, don’t do a very good job of setting some of the prices that are most important in our lives; and that other social forces should, *and can*, take more intentional control in some areas of some price-setting.

This conclusion is not quite so radical as it sounds, for in reality many prices are already set by a much more complex set of factors than just market-determined supply and demand. The reason we are not generally aware of this is that our perceptions are shaped by an economic theory that has gone too far in defining a particular kind of ideal economy, and then in setting out what we must and must not do—or believe—for this ideal to be realized. Which, in fact, it never is.

Hence a part of this paper will be about the economic theory that prevents us from seeing some opportunities that are before our eyes. Since these veiled opportunities are pathways to overcoming serious problems, we also often avert our eyes from the problems themselves, feeling that they are essentially insoluble. They are not. They have seemed so because we lack a theoretic framework that can make sense of them, and also because each one is part of a set of problems and issues that are interconnected to an almost baffling degree.

When you want to make sense of a really knotted tangle, you need to figure out which threads to pull on. I will list the intertwined issues I have been trying to unscramble in thinking about the new economy, and then I will take hold of a skein of threads that seem to me most likely to lead to constructive new ways of understanding.

Box #1: Critical issues for economies of the 21st century:

1. Economic activity and ecological health: the issue of scale
2. Economic activity and human well-being, on the consumption side
3. Technology and work
4. Work and well-being
5. Demographic change
6. How to make the transition to economic systems that are socially and environmentally just, sustainable, and satisfying

1. First of all is the **issue of scale** in the relation between **economic activity and ecological health**. The global economy appears, from many indicators, to have gone beyond a scale of economic activity that is ecologically sustainable. This suggests the need to find, especially for the rich countries, an alternative goal to that of growth as it has been understood, for example, in terms of GDP.
2. The relation between **economic activity and human well-being on the consumption side** raises the questions: what kinds of outputs contribute to human well-being: and how can economic activity, including systems of production, be refocused towards enhancement of well-being – rather than simply the maximization of consumption?
3. The relation between **technology and work**. The burning questions here are: will technology raise labor productivity, hence wages, faster than they are reduced by resource degradation and depletion? And will the number of jobs that are needed inevitably be reduced by technology in concert with the shrinking economy demanded by ecological constraints?
4. The relation between **work and well-being** in a reoriented, post-growth economy. What, aside from a pay-check, are the values of work? Are there goals other than full employment that should be considered? What is the importance of leisure in our rethinking of work and well-being?
5. There is a huge, largely unexpected **demographic shift** taking place: A slowing of population growth, and then its likely (though not certain) reversal into population decline. This is predictable or already underway in much of the world.
6. With all of these complex interrelations in mind, the great practical challenge is to work out the least painful – maybe even the most exciting – ways of making the **transition from existing economic systems to systems that are socially and environmentally just, sustainable, and satisfying**. If we do not manage to plan an orderly U-turn from our present growth dependence, the result will be ecological—hence economic and social—disaster on an almost unimaginable scale. To quote the subtitle of Peter Victor’s path-breaking book on the subject, our best hope is “smaller by design, not disaster.” In stating this challenge I both suggest the basic elements of the new economy—it must be *socially and environmentally just, sustainable, and satisfying*—and implicitly state why we need a new economy: because these words do not characterize the economy we have now.

For the long run, the scale of the economy is the most critical element on this list; but you can’t get to the long run in one jump, even when this long run is not so very far away; indeed, it is coming up not only in the lives of our children and grandchildren, but probably also in our own lives. To get there, conceptually and practically, we have to go, I believe, through some short-run issues around work. But these, too, have been very hard to get a grip on because of the theoretic assumptions pulling against us.

I should emphasize that, while the theoretic issues are relevant for the whole world, the practical conclusions and suggestions I draw later will be addressed expressly to the rich countries. Some of the suggestions will be relevant also for developing countries, but the circumstances are in many ways so different that this would all need to be quite substantially rewritten to address their situation.

3. Scale and Growth—or Not?

Let us start by considering the idea that we need to reduce greatly the throughput of materials and energy of the global economy—recognizing that this will probably mean a reduction in economic growth, at least as we now understand that term.

A cessation of economic growth, as it is now measured and understood, may be expected to come about through a combination of two principle factors:

Box #2: Reasons to expect the end of (or a very long pause in) economic growth, as it is now measured:

1) RESOURCES

Material and energy inputs are more expensive

because they are of lower quality, scarcer, and harder to access. *Hence*

→ each worker on average has less or lower quality of materials and less inanimate energy to work with; *hence*

unless technology can make a dramatic rescue

→ **workers are less productive,**

→ **wages go down and**

→ **aggregate demand goes down**

2) DEMOGRAPHY

As **population growth slows**, and then in many countries,

populations decline in absolute size, this means

→ **fewer adults of working age** as a proportion of the whole population

On the demand side, unless technology can provide an extraordinarily dramatic rescue operation, products, and the physical inputs (including energy) required to make them, will become more expensive relative to incomes from work. This would be the result of ecological constraints making themselves felt through rising resource costs and/or through deliberate social action designed to prevent further depletion and degradation of valuable scarce resources. It would likely result in a decline in wages, and hence in effective household demand.

On the supply side—specifically in relation to the supply of labor—in most of the world demographic shifts will shrink the proportion of the population that is of working age relative to those who are too old or too young to work.

4. Some possible outcomes for jobs and incomes

In terms of jobs and income there are several quite different outcomes that could be traced from the unfolding of these factors.

Box #3: Six Possible Scenarios:		
	Plenty of jobs	Not Enough Jobs
Reduced Productivity of Labor	A) Wages go down; general decline in GDP	B.1) <i>Job sharing</i> ; generalized decline in material standard of living
		B.2) <i>No job sharing</i> ; some do well, while most suffer severe reductions in standards of living
Technology Rescues Labor Productivity	C) Wages remain about the same; GDP changes little (However, demographic shifts may lower <i>per capita</i> GDP—hence lower household income)	D.1) <i>Job sharing</i> ; standards of living may stay flat, or decline slightly
		D.2) <i>No job sharing</i> ; some do very well, while others suffer effects of unemployment

There might be enough jobs available for all, or most of those who want them; or there might be a decreased market demand for labor, resulting in either massive unemployment, or else job-sharing.

Decline in resource quality and quantity might make labor less productive, resulting in lower wages³; or technology might come to the rescue, maintaining or increasing labor productivity, and therefore not reducing labor income.

Scenario C, in which technology rescues labor productivity without cutting jobs, is the one that most people would hope for – though, as I’ll discuss later, scenario D.1, with reduced work hours, could also be very appealing. Frankly, though, I am not very optimistic about technology rescuing productivity. Even if it does, there is also the issue of whether a reduced work-force, relative to total population, can maintain per capita output at today’s levels.

5. Issues of resource scarcity and quality

However, I will start from a different perspective, with a few remarks on the potential for a technological rescue, in terms supplied by Howard Brown, one of the most optimistic business people I know, and one of the smartest. He co-founded a company called dMASS, Inc—a name

³ Another outcome is possible, at least for a while: since the share of income going to profits has risen over the last few decades, at the expense of flat or declining wages, a reversal in this trend could, for a while at least, mitigate the change in the relative prices of material inputs vs. labor.

that refers to the reduction of resource mass through design. The goal of dMASS is naked value. *Naked Value*—the name of the excellent short book he wrote with two of his colleagues—is defined as “the essence that remains in a product or service after stripping away all unneeded resources. It’s the pure benefit customers seek, without waste and without material resources that don’t contribute to wealth or well-being.” (Brown, p. 3)

The reason why it is so important to concentrate on naked value is that the world is facing lower quantities and inferior quality for many essential resources. The British Geological Survey now publishes a “Risk List” ranking 52 economically important elements based on the risk that the supply will not be able to meet current expectations and patterns of use. A 2011 McKinsey Report stated that

“A number of factors are conspiring to create a risk that we might be entering a new era of high and volatile prices over the next two decades. Up to three billion people could join the middle class, boosting demand at a time when obtaining new resources could become more difficult and costly. The stress on the resource system is likely to be compounded by increasing links between resources that mean that price shocks in one can swiftly transmit to others. In addition, environmental deterioration, driven by higher consumption, is making the supply of resources—particularly food—more vulnerable.” (*McKinsey Global Institute*, Nov 2011)

These alarming predictions have already been proven quite correct. The reason this is so is partially explained by Richard Heinberg in his book, *The End of Growth*:

“When the quality of an ore drops the amount of energy required to extract the resource rises. All over the world mining companies are reporting declining ore quality. So in many if not most cases it is no longer possible to substitute a rare, depleting resource with a more abundant, cheaper resource; instead the available substitutes are themselves already rare and depleting.” (Heinberg, p. 161)

Howard Brown similarly notes that

“Growing demand in the face of constrained supplies creates resource price volatility and conflict over unreliable supplies. So, while your markets grow, and perhaps demand for your products grows, the resources you need to operate your business become more expensive and less accessible.” (Brown, p. 10)

The good news from Brown is that there are technological and smart-thinking solutions that will make it possible to shrink the throughput of materials and energy in our economies while improving the functionality of the total output. He says, “For any business today, the central goal should be figuring out how to deliver the benefits people need in new ways with as little resource mass as possible.” (Brown, 36) And he cites as examples companies that are “developing products that deliver light without light bulbs, portable power without batteries, warmth without thick insulation or boilers, bacteria-safe surfaces without chemicals, and clean clothes without detergent.” (Brown 4-5) The less good news from McKinsey is that

“the capital needed each year to create a resource revolution will rise from roughly \$2 trillion today to more than \$3 trillion. However, the benefits could be as high as \$3.7 trillion a year if carbon had a price of \$30 per tonne and

governments removed substantial resource subsidies and taxes. Even this would not be sufficient to prevent global warming and provide universal access to resources, which could cost in the region of another \$350 billion a year.” (*op. cit.*)

Environmentalists such as Heinberg assume that the rich world will need to greatly reduce its consumption. Brown’s optimistic twist on this is that, yes, we will need to reduce greatly the use of materials and energy used in production, but it will be possible to end up producing equal or better outcomes for consumers. The McKinsey report similarly assumes that the technology is there, if the money and the will can be found. As for whether any of this means an end to economic growth as we know it—that may depend on how we measure growth. Maybe consumers will consent to spend as much on the naked value of oral hygiene, without the packaging and materials now contained in toothpaste. However, if the reduction in input mass occurs faster than the rise in input costs, the net will be reduced production costs. Then market competition should bring down the price for which this good—or service—can sell.

We thus have a picture that is both attractive and scary: *our economies might retain or increase their ability to produce what people want, but less money will change hands as businesses spend less on inputs, and consumers spend less to get the real values they seek.*

The alternative is a picture that is scary but unattractive: *businesses do not manage to reorient their conception of the naked value they are selling, or do not manage to reduce sufficiently the energy and materials required to produce that value, and the shift away from growth (in blunt terms, severe depression) occurs, not because of human cleverness, but because of binding ecological constraints.*

6. The meaning for economic theory—and production

Without trying to predict which path will be taken, I will now turn to a consideration of the issues for economic theory that arise in contemplating the likelihood of the major changes in economic systems that will be required. This will not be as boring as you might expect; the relationship between theory and reality is dramatically overdue to be realigned. In the 20th century, economic theory, regardless of its realism, was allowed to direct policies – some self-fulfilling, and some disastrously different from the announced intentions. We must move to a theory that is not only based on observed reality, but that also gives attention to what kind of economy is necessary, possible, and desirable.

Therefore the first challenge to the old economic theory is the question: **what are the goals for the economy?**⁴ The existing theory claims no overt goals, but it has implicit ones: economic growth, for macroeconomics; and maximization of consumption for micro.

The second challenge derives from the critical reality that **the scale of an economy must not exceed its supporting ecosystem.**

⁴ This is not the same as asking about individual economic goals, which may be such things as getting enough money to live on, or making ones company profitable.

This is related to a third point that has been left out of the 20th century economic theory: **Any economy is embedded in and completely dependent on its ecological and social contexts.** An economy is a sub-system of a human social system; and that, in turn, is a subsystem of the ecological context. Each of these systems affects, and is affected by, the others.

Those three points have to do with how we think about the economy. The next point is about action as much as it is about theory. **The requirement for transition to a post-growth economy begins with constraints on production.** It is critical, at this juncture, for humanity to join with (or, if we are smart, to anticipate) nature in limiting those goods or services whose production requires throughput of materials and energy of kinds that are ecologically damaging, or that are becoming depleted in ways that threaten future ecological and economic sustainability.

This is not a new idea: there are always supply constraints, which normally feed, through markets, into prices. What I am talking about, however, is not adequately recognized in 20th century economic theory. It is about constraints that are based on projections regarding limitations that will be more binding in the future than they are now. Such projections are well-documented in scientific literature, but they are not translating adequately into current prices: The various futures markets either are too short-sighted, or not knowledgeable enough, or not powerful enough, to perform this translation. Therefore a major challenge to economic theory that will emerge from this situation is the question of **how to insert scientific knowledge of future constraints into near-term behavior, when market-derived price signals have proven inadequate to do so.**⁵

7. Using prices to achieve goals

A proposal to set prices by something other than market mechanisms, though breathtakingly heretical in the current economic ideology, is not, of course, really new in the history of Western economics. As one example, during World War II John Kenneth Galbraith oversaw a system of price controls designed to ensure that priority would be given to resources that were needed for the war effort.

That heresy of Galbraith's was significantly different from John Maynard Keynes' earlier argument that the federal government must act as a major generator of demand, for labor and for the products of labor. The Keynes era, which is reluctantly (but increasingly) accepted by modern economists as a rational response to severe economic recession, was similar to the present in two important respects: it accepted without question the desirability of economic growth; and it supported this growth through the market, using government as an engine of demand. The government accepted responsibility for increasing the demand for labor, with a resulting increase in household income. Markets responded to rising household incomes, hence rising consumer demand, with price signals that enticed investors and producers to increase their activity.

⁵ The organization 350.org is attempting to address precisely this question as it urges endowments and other shareholder groups to anticipate events that will make it necessary to leave a large proportion of known carbon-based fuels unused because of their climate dangers.

The Galbraith price-control system, in contrast, could be said to have overridden the market, rather than using it—and for this reason is hardly remembered today as a part of economic history. While Galbraith did not at that time imagine a situation when it might be necessary or desirable to end or reverse economic growth as we know it⁶, he was notable for his casual attitude toward markets—as compared to the reverence accorded them by, for example, Milton Friedman and his disciples. Galbraith did not see any reason to believe that markets would generate, at least within the urgent time frame required for the war effort, the prices needed to direct production appropriately. Among the things that Galbraith and Keynes did share, however, was the broad recognition that market prices can generate sub-optimal results, whether in terms of a national aim, such as war production, or in terms of maintaining the level of demand for output that would ensure full employment.

A third example of price-setting outside of markets is perhaps even more telling, as it continues into the present, with little attention to the fact that critical prices are being determined by other-than-market forces. Countries that decide to increase exports and decrease imports regularly regard the exchange rate for their currency as a tool for affecting the buying patterns of their own citizens as well as of people in other countries. This may fail if the country in question is inflation-prone, but otherwise it often succeeds in changing the price of the currency as desired. The alternatives to a central government taking charge of a country's exchange rate are either to simply peg the exchange to some other currency—in recent years a number of Latin American currencies have been pegged to the dollar—or to allow it to “float.” The latter is, indeed, a choice to leave the decision to international markets; but, for strong economies, some degree of currency manipulation is an accepted way of influencing prices.

The point of these examples is simply to say that the magic of the market is not always sufficient, without strong guidance, to achieve desired results through internally-generated price signals. That observation challenges the economic theories of the 20th century which, ignoring examples such as these, maintained a never-meddle-with-the-market ideology.

This raises the next great challenge to an economic theory that, for most of the 20th century, has claimed to be value-free. Using markets as well as other means we **need to find ways to set prices that will appropriately recognize human values, including equity, ecological realities, and present and future needs.**

In fact, the 20th century economics claim to a purely objective, value-free theory has worn very thin. The theory, as taught in universities and as used in policy-making, implicitly accepted the goal of maximizing efficiency, so that the pursuit of self-interest could deploy the available resources to achieve "*the most desired results*". Please note the values assumed in “most desired.” The phrase raises the question, “desired by whom?” There is an answer to that question: When efficiency is pursued through the price system, the only kinds of self-interested motives that the system works to maximize are those that go through the market: specifically, the consumer's desire to make purchases and the producer's desire to make profits. Only these

⁶ Galbraith did however write one essay near the end of his life in which he considered the possibility that there could be a limit to how much consumption is needed for a good life; see “Afterword: A Japanese Social Initiative” in Jonathan M. Harris and Neva R. Goodwin, eds., 2003, *New Thinking in Macroeconomics: Social, Institutional and Environmental Perspectives* (Edward Elgar).

desires—and *only if they are backed up by money*, which allows the economic actor to participate in the market—benefit from the efficiency characteristics of the system. In the "one-dollar, one-vote" price system, the market minimizes recognition of the needs, wants and values of those who have few dollars with which to express them. Since standard economic theory has no way of formally recognizing the validity of needs and wants that cannot achieve market expression, the emphasis on efficiency crowds out attention to issues of equity.

I am making the claim that markets cannot always be left alone to set prices that are fair, that take account of the future, that will guide human behavior to desired results, or that adequately reflect human values. There is an automatic response to this: "At least the market is objective; if we step outside of the market to set prices, who will choose among subjective values?" I have proposed some preliminary answers to this. First, market prices are *not* purely objective: they reflect the wishes of the rich and powerful much more than of the poor; and second, the government is widely accepted as an appropriate meddler in markets in times of national emergency, such as war, deep recession, economic catastrophe, present or future, or in subjects of broad national interest such as exchange rates.

Wages, as discussed below, are a particular category of prices. This topic turns out to be the essential starting point – but *not* the end point – for understanding how an economic system that is ecologically sustainable – that is, a post-growth economy – can provide good lives for people. The conundrum that is often the stopping point for this conversation is the perceived requirement for economic growth in order to keep providing enough jobs.

8. Work

The topic of "jobs" is a subset of the topic of "work" which is, in fact, a much broader topic. Not all work is done in a context that is defined as a job; some of the most important work, for the survival and well-being of our species, is done without pay, in homes and communities, where children are raised and attention is given to major aspects of people's socialization, health, rest, comfort and entertainment. Therefore I will give some attention to the broad subject of work before getting to its subset, jobs.

There are two essential keys to a good, post-growth society. They are the matter of how work is rewarded; and how children and others who cannot work are supported. Social democratic societies in Northern Europe provide plenty of good models for achieving the second essential. I will at this point take a detour from theory to focus on the first critical issue – how work is rewarded.

Not all work has all three of the functions outlined in Box #4. It may create valuable goods and services, or provide positive meaning to the worker, with or without generating income to the worker; and it may generate income while producing nothing of value, or while being a net psychic negative to the worker.

Box #4: Work has three main positive functions:

- It **provides income** to the worker, when the work is done as a job with a wage or salary attached.
- It **creates goods and services** that are valuable for those who use them. (In the case of paid work, users of these goods and services are often referred to as consumers; users of the output of unpaid work are a varied category, with no standard name, and sometimes include the worker, e.g., in the case of food raised for household use.)
- Work itself can have **positive meaning for the worker**, whether because it is done with other people, creating positive relationships, or because the worker enjoys the feeling of “a job well done”, or is happy to be producing something of value to others, or because it satisfies creative urges. (Standard economic analysis treats work itself as a bad—something that people do only out of necessity.)

For at least a century economics students have been told that the only economically relevant reward to labor is the wage. That is the first error: Important though wages are, work has other positive rewards that should not be neglected.

The second error is in fitting our understanding of wages entirely within standard price theory, with the neat intersection of supply and demand, and the value of the output of the last worker hired in a particular category (the “marginal revenue product”) put forward as *the* determinants of the wage. To be sure, these are very significant factors, but many other elements also intervene to affect why one type of work, or one type of worker, receives a higher wage than another.

The third error is to ignore the large amount of economically and socially important work that is done without the lure of a wage. In fact, it is important to think about the work that is done in any society according to not just one, but rather two, large categories: Either it is defined as a job, resulting in money income, or it is unpaid work. The second category produces results that, in monetary terms, have been valued at the equivalent of one-third or more of GDP.⁷

The discussion of labor in economics textbooks normally focuses on the function of income-generation. However modern economies are entering a period of enormous transition, when systems that have worked in the past to produce rising standards of living, accompanied (up to a certain point) with rising well-being, are due for reexamination. The systems characterizing modern industrialized economies are increasingly producing illth along with wealth. Some of the problems – as well as some potential solutions – can be seen in an examination of the three functions of work listed above. A major problem, as well as an opportunity, arises from the realization that the first and second functions do not necessarily go together: Work may provide income while not creating net social value. And, of course, it may create social value without generating money income.

⁷ The leader in this field has been Marylin Waring who wrote *If Women Counted* in 1988.

Box #5: When work does not create (human) value:

1. The work involved in making cigarettes, or financial instruments with hidden risks, are examples of work that produces **things that actually harm those who use them**. In a similar category, meat may be a health-giving part of the human diet, but not when it is raised in ways that lace the meat with antibiotics or growth hormones.
2. Products may diminish net well-being by engendering frustration and annoyance far out-weighting their utility to the user: e.g., products **designed for obsolescence, or so poorly made** that early failure is likely.
3. Aside from these specific cases of production of “bads” rather than “goods”, there is much evidence that a rich country like the United States has reached **saturation in many areas of consumption**; additional purchases do not increase the well-being of the purchaser.
4. Most broadly, virtually all production has some degree of **negative environmental consequence**, in the throughput of energy and materials.

Of course the last point in Box #5 does not mean that all production is bad; however it reinforces the idea that it is increasingly important, in a time of growing resource constraint, to prioritize among productive activities, and find ways—whether through incentive or regulation—to organize society’s resources toward the most valuable outputs. For that, we need to find new ways—other than who can pay more than others—to define what is of value.

9. The ideal economy

The foregoing discussion has pointed up several tensions in the subject of work. These tensions exist:

- **Between work that produces relatively little well-being but is well-paid, vs. the need for much work that now receives little or no monetary compensation.** The latter includes the production of food as well as the “caring work” that is often done by women, in basic health care, child care, and home activities.
- **Between the need for income vs. the fact that many jobs are not useful to society:** Any newspaper you pick up makes it clear that people in our society are heavily dependent on having paying jobs, even though many of those jobs produce things that should not be produced (for any of the reasons adduced in Box 5).
- **Between the work time offered by employers vs. workers’ preferences about working time:** many people work less than they want (usually because they would like to earn more, but sometimes—especially in the case of retired people—because they are bored or feel disconnected from society), while many others wish they had longer vacations or shorter daily or weekly work hours.

When this picture is looked at abstractly, the logical conclusion is that it would be desirable to discover or invent some better organization of the economy such that:

1. All children would have the means to develop their capabilities through nurturing love, quality education, nutritious food, clean water, secure health care, and adequate shelter—and this would be achieved regardless of the earning capabilities of their parents.
2. All adults would have access to basic survival and security.
3. Conditions of work would be such as to maximize the positive psychic rewards and to minimize, or fairly share, the work that is disagreeable.
4. Incentives and rewards to work would recognize the value of the work that is done, as well as any disagreeable aspects.
5. All the work that is needed would get done. And
6. Work that produces unneeded or harmful things would not get done.

If the first two conditions were fulfilled (as they now are in the U.S., partially, but insecurely, through a patchwork of state and federal “safety nets”, public education, etc.), this would reduce the pressure for jobs, jobs, jobs—hence making it more possible to consider implementing condition #6.

Another practical possibility is the use of public works programs, as recently suggested, by Eduardo Porter, in the *New York Times* (Jan 29, 2014, p. B1). Porter regards this proposal as very radical – “Many economists go pale at the thought of a mass program of public jobs to combat unemployment” – even though he points out the good results of the Public Works program that helped people survive through the Great Depression in the 1930s.

Porter does not even consider what some believe to be the most effective (though perhaps an even more radical) approach: To revise the social safety nets to include a basic income guarantee. This could be a significant step towards simultaneously achieving two important goals. It could greatly reduce poverty, thus replacing much of the burdensome and expensive apparatus of welfare, unemployment insurance, etc.; and, if designed with this intention, it could implicitly reward and enable some of the unpaid work on which every society depends, by lifting the requirement for all to take paid work.

A companion paper, “Basic Income for a New Economy,” puts forth such a proposal. It would be feasible in settings wherein a majority of those who do have paying jobs receive wages high enough so that they can satisfy their well-being needs and desires, with enough left over to allow the payment of fairly high taxes. The tax system would need to be revised so that incomes were taxed in a more progressive way. Moreover, consumption taxes would need to be carefully designed to add to the cost of consuming things that have negative impacts on the user, the workers, or society at large. The soda tax proposed by Michael Bloomberg in New York is a good example of a step in the right direction—and also, of course, illustrates the negative reactions to such an effort.

Economic theory cannot alone make such changes, but a change in economic theory—removing its support from the idea that the only fair or appropriate prices are those set by the market—can at least withdraw some support from those who oppose such steps.

A basic income guarantee would address the conditions 5 and 6 as listed above: *getting done the needed work of society, while not wasting resources or burdening the natural environment with useless production.*

Why is this all so hard to bring about? The condition that would require the most dramatic change from the economic system we have now is #4. This takes us back to the sixth challenge for the new economy that was set at the outset, which is also a challenge for the theory that will undergird such an economy. It must find ways to **set incentives and rewards to work that recognize, at least much better than at present, both the social value and the intrinsic rewards or distastefulness of different kinds of work.**

10. How standard wage theory must adapt

Standard economic theory has at its core the idea that prices – including wages – are set by the intersection of supply and demand. Wages are described as set at the intersection where people supply their work by choosing how much (and where and how) to work; while the demand for labor is derived from the demand for the products of that labor. The theory is further simplified by the assumptions that employers select workers based only on well-based expectations of their ability to contribute to the productive effort, and that workers have good information about all the possible jobs they could have. The conclusion from this reasoning is that all workers receive their just deserts: their pay reflects precisely what they add to the firm's receipts.

This picture contains some realistic points about supply and demand, along with a number of unwarranted assumptions. Normally neither the workers nor the employers have as much knowledge as is assumed, about either the product market or the job market. While wages are nearly always an important consideration, many workers give equal or nearly equal weight to a number of other things in their selection of a job, including such issues as location, opportunities for learning and advancement, image and status associated with the job or the particular employer, or the social value of the product. (The latter concern is a major motivator for many people who chose to go into often low-paying jobs with non-profit organizations, or in areas such as social work. See Frank, 1996) While both the lack of perfect knowledge and the presence of personal preferences receive some acknowledgment in the old model, these complications are not really factored in: The old-model conclusion is that the stringent assumptions of perfect knowledge and simply-modeled goals are *good enough* so that, *on average*, the labor market works as it is described, with all workers receiving exactly what they deserve.

Other social sciences have pointed to masses of data showing labor markets having rather different outcomes. Perhaps it is safe to conclude that the old model goes about half way in predicting outcomes. The simple 20th century theory—powerful because it is simple, but also wrong because it is simple—ignores other factors that, under many circumstances, are at least as important in determining wages. These include power, externalities, history, and culture. For lack of space, here I will only comment on one of these.

Power in society is often connected with legal status. Individuals or groups who have the standing that allows them to raise, or to resist, legal challenge have significantly greater power

than those who lack such standing. A good example is provided by the case of illegal immigrants in the United States. They are vulnerable to threats of exposure to immigration authorities; and if they are mistreated or underpaid they cannot take their case to law, as that would, again, expose their status to the immigration authorities.

Unions confer on their members the legal status that makes them more effective in protesting unfair treatment. John Kenneth Galbraith famously referred to unions as the salutary “countervailing power” against excessive corporate power in the United States. However since the 1970s union membership in the U.S. has declined dramatically. The reasons include the threat that companies can replace union labor by lower-cost legal or illegal immigrant labor; the threat that union demands can cause companies to source their production overseas where wages are lower and unions are not a problem (China is notable for blocking attempts to legalize unions); and the growth of corporate political and economic power with ever less countervailing power of any kind.

When workers lack bargaining power, gains in worker productivity can be diverted into profits, rather than wages. It is increasingly widely recognized that the gains in labor productivity that were achieved through the last quarter of the 20th century mostly resulted in increased corporate profits, with little going to raise workers’ wages, and a disproportionate amount going to top management.

Another set of issues under the heading of power concern gender and ethnicity. This issue may be very briefly summarized by noting that any type of work that is predominantly associated with a group that lacks political/cultural/economic power in the larger society will have lower status and lower pay.

Given this very brief overview of existing wage theory, and the realities it faces, what would a more realistic and useful theory of wages look like?

Above all, it would start with an explicit goal, replacing the implicit goal of the existing theory, which is that the wage should be equal to the worker’s marginal revenue product (i.e., the market value of the output produced by the last unit of labor in the category to which the worker belongs). The alternative goal, for the economic theory appropriate to the new economy, should be that **the returns to labor should approach the human value to society of the worker’s output**. After a little discussion of this goal, I will address very briefly the economics of achieving it—that is to say, how money flows in an economy organized to this end would differ from those seen in the United States today.

It will never be possible, or even desirable, to achieve this goal precisely. To start with, it is impossible to make exact calculations of human value. Efforts to move toward this goal would need to be made in rather general terms, which would require a great debate about each society’s values. The most practical centerpiece of a move in the direction of the goal of aligning work income with human values is probably related to the concept of basic income.

In my companion paper, “Basic Income for a New Economy,” I propose a system that, to begin with, depends on the size and composition of any household. One portion of the proposed

“BICS” (Basic Income / Core Support) system would compensate “Core”⁸ workers for their work in five areas: food preparation, household maintenance, and managing household finances, as well as for the hours of care required for children of each age, and for elderly or ill household members who require assistance from others. The “Basic Income” portion of a BICS system calculates the purchased inputs necessary (given household size and composition) to provide food, clothing, and housing, with associated furnishings and utilities. As conceived at present, the total BICS amount would be no larger than the larger of its two elements. Importantly, the Core Support element would be identified as such, to ensure that all household members are aware of this work, now so often invisible to those who are not doing it; and efforts would be made to ensure that this portion goes to those individuals who actually do this work.⁹

How would such a program relate to the human value of work? To give one example, caring for a child should be valued more highly than is indicated by the wages of baby-sitters and day-care personnel. I would suggest, however, that society through government should not undertake to differentiate between really excellent child-care and that which is much less good (except for setting standards for e.g. day-care facilities). This, indeed, can be partially left to the market; if each family received an amount that society deemed reasonable in relation to the ages of their children, then parents could choose to keep that income for themselves, or to turn it over to others, who would compete for these jobs on the basis of competence and caring.

For another example, consider the extraordinarily highly paid managers of money who contribute little or nothing to the real economy, but skim off large salaries by moving money around. Society could decide to exact very high taxes from people working in the financial sector – not so high as to make it impossible to earn a livelihood in that sector, but making it impossible to get very rich that way. Ideally the local banker in Portland, Maine, who accompanies a prospective borrower to view the business she wishes to enlarge would not earn less than the Wall Street banker who bundles mortgages into packages that cannot be well understood by investors who, themselves, have no relationship with the activity.

If changes need to be made so that child care is better compensated, and money-managers are less well compensated, what would we say about artists? I would suggest that the social discussion would go along these lines: Some art is needed, and extremely valuable – but there are also many people who would be happy to spend their time producing art that very few others would value, while doing nothing else that produces humanly valuable results. High compensation for all would-be artists would be difficult for any society to afford. Selection of “the best” artists by government officials, or even by the heads of museums, does not (considering elite fashions of art today – I am showing my prejudice here) seem likely to result in selection that is either especially fair or especially conducive to the production of humanly

⁸ The term “core” is one that I proposed in about 1998, when working with Edgar Cahn on conceptual tools for Time Banking systems. (I also at that time coined the phrase, “unused capacities and unmet needs.”) “The Core economy” (or “the core sphere”) has since come into wide use, including in the textbooks I have authored (Goodwin et al, 2014 a, b and c), where the core sphere is defined as the place where people generally raise children, prepare meals, maintain homes, organize leisure time, and care for mildly (or sometimes chronically) ill individuals.

⁹ The system, as spelled out in the paper, does not assume that it is only women who do this work, but lays out default assumptions that potentially involve all household members between the ages of 12 and 82. This is an invitation to households to discuss who is actually doing the work, and who should therefore receive and handle the income.

valuable art. Therefore my own suggestion would be that artists receive a “basic income” such as BICS just like the rest of the population, and income above that amount would depend on their producing works that people do want to buy (counting on the market to manage this), or on working at other jobs, as artists do now.

This discussion has moved quickly from theory to implementation. The foregoing examples are intended to illustrate the goal described above, of better aligning the returns to work with the human value to society of the worker’s output. These examples appear to give government a very large role, in levying taxes and supplying subsidies. While one of the cases discussed (that of financial management) suggests a money flow toward government, in the form of taxes, the other cases (of child-care and the production of art) imply significant subsidies from government to individuals or (possibly) families. If governments are not to pile up impossibly high debts, there will need to be some equalization of the flows to and from government. Working this out is a huge project, which will not be attempted in this paper.

11. Getting to a better future: the essential role of human values

Section 9, which described an ideal economy, was followed by a section suggesting that theory – in this case wage theory – is an impediment to possible changes that could move the economy in the desired direction. Before concluding with some concrete examples of existing real-world models that could be developed toward the desired change, I will summarize some of the reasons to reevaluate the extent to which human values could lead the way in setting important prices, using markets only as appropriate to achieve the desired valuations.

The prices of scarce resources and of more or less destructive energy sources are of great importance at this critical moment in human history; a discussion has been ongoing for more than a decade about how these prices (especially for energy) might be brought more into line with future realities. An equally important discussion is just beginning among proponents of the “new economy,” regarding how work is organized and compensated. There are many human reasons to care about this, as well as the political reason, that concern for jobs is making it difficult to face environmental realities.

Let us imagine that by 10 years from now economics, in concert with ecology, technology, and a variety of other fields of human knowledge, has progressed to a point where it is capable of identifying the types and amount of throughput that can safely be processed, given local and global ecological constraints. This determination, of course, depends on priorities for output, as well as on the technologies to be used – that is, how far technology has progressed toward stripping production down to the “naked value.”

Out of these calculations would come a conclusion regarding how many, and what kind, of labor hours are needed in the formal economy. Note an important point that was suggested earlier: *other things being equal, the total of labor hours demanded will be larger if average labor productivity is low, but less if its productivity does not decline, or if it continues to increase.* And then there is the important question of whether society has managed to organize work in ways that allow shorter work weeks for those who want them – an achievement that would, in itself,

represent a critical recognition of the importance of unpaid care work, because such social organization would leave more time for that.

Box #3: Six Possible Scenarios:		
	Plenty of jobs	Not Enough Jobs
Reduced Productivity of Labor	A) Wages go down; general decline in GDP	B.1) <i>Job sharing</i> ; generalized decline in material standard of living
		B.2) <i>No job sharing</i> ; some do well, while most suffer severe reductions in standards of living
Technology Rescues Labor Productivity	C) Wages remain about the same; GDP changes little (However, demographic shifts may lower <i>per capita</i> GDP—hence lower household income)	D.1) <i>Job sharing</i> ; standards of living may stay flat, or decline slightly
		D.2) <i>No job sharing</i> ; some do very well, while others suffer effects of unemployment

The earlier Box 3 is now reproduced for convenient reference. The outcome it suggests as scenario C will probably win the most votes. Optimists have suggested that the “naked value” versions of all the things we want – health, nutrition, education, transportation, communication, home with all its comforts, and entertainments in sufficient varieties – could be produced within the envelope of ecological constraints and resource limitations. It would be even better if “all the things we want” had somehow been re-defined to exclude things that are not actually contributing to well-being – reducing the amount of work society demands by excluding the kinds of outputs I described earlier, when talking about work that does not create human value, even if it creates market value. In the best case, such a redirection of work effort could dovetail with demographic trends, so that the workforce declines as a proportion of total population just as household demands are reduced, to focus on real contributions to well-being. Thus per capita GDP and average household incomes could simultaneously decline without a reduction in well-being.

If this re-definition of wants was indeed achieved, scenario D.1 could also be quite rosy; this scenario supposes that, while technology has kept labor productivity high, it has also streamlined production so that it requires *less* labor inputs along with less material and energy. Indeed, this is the picture painted by Julie Schor, in her book *Plenitude*; all well-being wants are served within nature’s constraints, while leisure time is greatly increased.

Those are very appealing images. How do we get there? In my concluding remarks I will emphasize the ways in which prices could be understood and used differently from the existing situation.

12. Conclusions

As was noted earlier, there are relevant models to draw on, of countries where sensible tax and welfare policies give governments the means to achieve the first requirement in the ideal economy: *To support everyone, especially those who are unable to work, or cannot find work.* However any welfare state I know of still needs *to give more attention to work that is not done through the formal job market.* There is movement in this direction in countries where governments provide support that allows parents to care for their own children. The alternative – to pay only for day-care that permits parents to do other, market work – is hugely inefficient, ignoring the tremendous value to society of good parenting by the actual parents. (My feminist friends have a number of different points of view on this.)

Section 9 proposed two specifically work-related types of programs that could either provide more paying jobs – a **public works program**; or support the essential, unpaid work that is done in homes – a **basic income program**. The latter could be designed to replace much of the very leaky state and federal system of safety nets now in place in the United States.

Modest amounts of **support for other unpaid or volunteer activities** could enable the non-profit sector to add a great deal more to the quality of life. An example is time banking, a system of exchange in which time, not money, is the currency that allows the connection to be made between unused capacities and unmet needs. Time banking systems have generally been most successful in retirement settings, where there are many human capacities with no good outlet; but Edgar Cahn, a prime inventor and mover behind such systems, has recognized that if they are to endure they require a consistent manager, who probably needs to do this as a paid job.¹⁰

Not everything we want to achieve can be done by just adapting existing models, but a great deal can be. **Taxation** is a well-known way to change prices. Those who don't want to admit that government is or should be in the business of changing incentives will defend taxes, if at all, only as a way to raise income for the government. But whether or not we like the current regime we might as well admit the reality, and work to use taxes to bring about the results we want, rather than the results we don't want. Constructive examples would include sumptuary or luxury taxes, set high enough to help discourage status consumption¹¹; and graduated income taxes that would begin at a high level and could be designed to bring the compensation of the highest paid executives into some reasonable relation to the compensation of average wages in, for example, the lowest-income 20% of the economy¹². While we're at it, capital gains taxes should be set at a high level, to get away from the present situation, where unearned income is taxed at a substantially lower rate than income from work. Proposals for taxes on carbon emissions are especially important in a time where the release of greenhouse gasses pose a severe threat to the future.

¹⁰ See new economics foundation 2008

¹¹ See Frank, 1999

¹² This is a better approach than tying wages of management to the lowest or median salaries in their own companies, for in the latter case it is possible to manipulate the system – e.g., outsourcing low-wage jobs – to raise the company average while not actually improving workers' income. Tying wages of management to the incomes of low earners would instead create an incentive to improve the condition of the poor.

There are plenty of other existing government programs that could be reformed to align better with ecological realities and human well-being. **Subsidies** are a good example. A *Grist* commentary on an IMF report on global fossil fuel subsidies notes that global *direct* subsidies that promote consumption of fossil fuels, such as below-market gasoline prices, amount to \$480 billion a year, while implicit subsidies, including un-internalized externalities, may be as high as \$1.9 trillion a year.¹³ These numbers dwarf the global renewable energy subsidies. Again, this exemplifies the current situation where prices are being very effectively manipulated, but since the dominant economic theory/ideology doesn't believe this should happen, it is done without due public attention to *whose* values are being served in the manipulation. Even if we did not increase the degree to which prices are now skewed by government action, we could move much closer to the ideal world by shifting that effort toward the real values that need to be expressed.

Much is said about public-private partnerships. A critical area for making these work in the public interest is **investment in research and in productive activities** that will most benefit society while respecting nature's limits. Suppose we were to start from a concept of *restorative development*: not just keeping us where we are, as in the notion of sustainability, but rebuilding the health of ecological and social systems that have been damaged over the last century. Perhaps there needs to be an academic discipline of restorative development, or some organization, similar to the IPCC, that can outline ways of identifying activities that will promote restorative development. Such activities would presumably include implementation of renewable energy, infrastructure, education and health, as well as research in all of these areas.

The price of capital – the expected return that can attract it to one place rather than another – is not the only thing that decides where it flows: the existing distribution of wealth, fashions of thought, expectations, egos, all play large parts here, as in other areas of price-setting. The Bank of North Dakota is a successful example of an alternative approach to the **ownership and investment of capital**. It holds state funds as well as deposits from individuals and institutions; it invests these in ways that are good for the people of the state, and that have turned out to be much more secure than the investments of strictly profit-oriented banks.¹⁴

On a range of scales, both much smaller and much larger than the state of North Dakota, there is a need to **prioritize constructive investments**. An urgent question is how to attract investment funds into these areas, and away from destructive activities. Rich Rosen at the Tellus Institute in Boston suggests using public utility commissions as models for how to better target and direct the use of new capital investment. As he has noted, the world cannot rely on traditional capital markets to properly prioritize the future need for capital among and within key industries. (Rosen, 2009) Rosen's colleague, Paul Raskin, has described the situation we should be moving toward as one where

“Publicly controlled regional and community investment banks, supported by participatory regulatory processes, recycle social savings and tax-generated capital funds. To receive funds from these banks, capital-seeking entrepreneurs must demonstrate that

¹³ David Roberts, “IMF says global subsidies to fossil fuels amount to \$1.9 trillion a year ... and that's probably an underestimate,” *Grist* <http://grist.org/climate-energy/imf-says-global-subsidies-to-fossil-fuels-amount-to-1-9-trillion-a-year-and-thats-probably-an-underestimate/> (Accessed 3/20/14)

¹⁴ Since the success of the Bank of North Dakota in riding out the Great Recession about 20 states have introduced bills to create their own state banks.

their projects, in addition to financial viability, promote larger social and environmental goals.” (Raskin, 2012)

This would be good news for cooperative worker ownership systems, which have often faced difficulties in raising capital.

I have given just a few concrete examples of areas where some of the knottiest problems can be solved through conscious attention to how prices are set. These examples include:

- Implementing a more well-being oriented welfare state, including, importantly, a guaranteed basic income;
- Enhancing support for the non-profit organizations that help to make it possible for people to do the work needed by society;
- Supporting public works programs where neither the private sector nor non-profits are able to undertake tasks that are needed by society;
- Shifting taxes to be more progressive, and to discourage consumption that is bad for the environment as well as for consumers and others who are negatively affected by the composition of consumption;
- Aligning government subsidies with social and environmental priorities; and
- Recognizing that investment is a public good, which should prioritize sustainable well-being and restorative development.

It becomes possible to think about these options when we recognize that prices are not set by God or Nature: they are a result of human decisions. Those human decisions can be made on a strictly individual basis, in a market context, in which case the results are skewed toward the decision-makers with the most money and the most power; or else they can be made communally.

The question behind all of these questions is: Who decides? To the extent that the answer lies in the political arena, we need to figure out how to elect people whom we might trust, which means getting money out of politics. Trust is a significant driver of human affairs. We should withdraw our trust from corporations that purely seek profit, to the exclusion of the social good. Markets can be an important part of many solutions, and governments are never perfect; but we should not trust the economists who tell us that markets have all the solutions. It is also important to provide for governments public scrutiny along with the support they need in order to do their work better than is at present possible for the underfunded, understaffed and demoralized public sector in the United States.

When we focus solely on the knotty issue of economic scale and growth, the problems seem virtually impossible to solve by design – we’ll just have to wait for disaster. But when we have untangled the knot, pulling on the price-theory thread and the work thread, we can begin to see the paths we must take.

Neva Goodwin is co-director of the Global Development and Environment Institute. She holds a Ph.D. in economics from Boston University. Inquiries can be directed to Neva.Goodwin@tufts.edu

Appendix: Excerpts from Keynes' "Economic Possibilities for Our Grandchildren"

The economic problem, the struggle for subsistence, always has been hitherto the primary, most pressing problem of the human race. . . . we have been expressly evolved by nature-with all our impulses and deepest instincts-for the purpose of solving the economic problem. If the economic problem is solved, mankind will be deprived of its traditional purpose.

. . .in our own lifetimes . . . we may be able to perform all the operations of agriculture, mining, and manufacture with a quarter of the human effort to which we have been accustomed. For the moment the very rapidity of these changes is hurting us and bringing difficult problems to solve. We are being afflicted with a new disease of which some readers may not yet have heard the name, but of which they will hear a great deal in the years to come--namely, technological unemployment. This means unemployment due to our discovery of means of economising the use of labour outrunning the pace at which we can find new uses for labour. But this is only a temporary phase of maladjustment. All this means in the long run that mankind is solving its economic problem.

Now it is true that the needs of human beings may seem to be insatiable. But they fall into two classes – those needs which are absolute in the sense that we feel them whatever the situation of our fellow human beings may be, and those which are relative in the sense that we feel them only if their satisfaction lifts us above, makes us feel superior to, our fellows. Needs of the second class, those which satisfy the desire for superiority, may indeed be insatiable; for the higher the general level, the higher still are they. But this is not so true of the absolute needs – a point may soon be reached, much sooner perhaps than we are all of us aware of, when these needs are satisfied in the sense that we prefer to devote our further energies to non-economic purposes.

Thus for the first time since his creation man will be faced with his real, his permanent problem – how to use his freedom from pressing economic cares, how to occupy the leisure, which science and compound interest will have won for him, to live wisely and agreeably and well. The strenuous purposeful money-makers may carry all of us along with them into the lap of economic abundance. But it will be those peoples, who can keep alive, and cultivate into a fuller perfection, the art of life itself and do not sell themselves for the means of life, who will be able to enjoy the abundance when it comes.

Yet there is no country and no people, I think, who can look forward to the age of leisure and of abundance without a dread. For we have been trained too long to strive and not to enjoy. It is a fearful problem for the ordinary person, with no special talents, to occupy himself, especially if he no longer has roots in the soil or in custom or in the beloved conventions of a traditional society. To judge from the behaviour and the achievements of the wealthy classes today in any quarter of the world, the outlook is very depressing! For these are, so to speak, our advance guard--those who are spying out the promised land for the rest of us and pitching their camp there. For they have most of them failed disastrously, so it seems to me – those who have an independent income but no associations or duties or ties – to solve the problem which has been set them.

The pace at which we can reach our destination of economic bliss will be governed by four things – our power to control population, our determination to avoid wars and civil dissensions, our willingness to entrust to science the direction of those matters which are properly the concern of science, and the rate of accumulation as fixed

by the margin between our production and our consumption; of which the last will easily look after itself, given the first three.

Meanwhile there will be no harm in making mild preparations for our destiny, in encouraging, and experimenting in, the arts of life as well as the activities of purpose. But, chiefly, do not let us overestimate the importance of the economic problem, or sacrifice to its supposed necessities other matters of greater and more permanent significance. It should be a matter for specialists-like dentistry. If economists could manage to get themselves thought of as humble, competent people, on a level with dentists, that would be splendid!

REFERENCES

Howard Brown, Kristin Aldred Cheek, and Kathryn Lewis, 2012, *Naked Value* (a dMASS Strategy Book)

Robert Frank, 1996, "What Price the Moral High Ground," originally published in the *Southern Economic Journal*, later (2010) appearing as Chapter 5 in a collection of essays, called *What Price the Moral High Ground: How to Succeed without Selling Your Soul*. (Princeton University Press, paperback edition)

Robert Frank, 1999, *Luxury Fever*. (The Free Press)

Jonathan M. Harris and Neva R. Goodwin, eds., 2003, *New Thinking in Macroeconomics: Social, Institutional and Environmental Perspectives* (Edward Elgar).

Richard Heinberg, 2011, *The End of Growth* (New Society Publishers)

John Maynard Keynes, 1930, "Economic Possibilities for our Grandchildren" in *Essays in Persuasion* (W.W.Norton & Company)

Jared Lanier, 2013, *Who Owns the Future?* (Simon and Schuster)

McKinsey Global Institute: "Resource revolution: Meeting the world's energy, materials, food, and water needs" November 2011; by Richard Dobbs, Jeremy Oppenheim, Fraser Thompson, Marcel Brinkman, Marc Zornes, at http://www.mckinsey.com/insights/mgi/research/natural_resources/resource_revolution

Paul Raskin, 2012 "Scenes from the Great Transition" at <http://www.thesolutionsjournal.com/node/1140>

Richard Rosen, 2009, "How Should the Economy be Regulated?" Pp 51-58 in the SUMMIT ON THE FUTURE OF THE CORPORATION, Tellus Institute, at <http://www.corporation2020.org/corporation2020/documents/Papers/2nd-Summit-Paper-Series.pdf>

Josh Ryan-Collins, Lucie Stephens and Anna Coote, Nov 2008, "The New Wealth of Time: How Timebanking can help people build better public services" published by nef, the new economics foundation; ISBN 978 1 904882 45 9 <http://www.neweconomics.org/publications>

Julie Schor, 2010, *Plenitude: The New Economics of True Wealth* (Scribe Publications)

Marylin Waring, 1988, *If Women Counted*. (Harper & Row, Macmillan, Allen & Unwin)

The Global Development And Environment Institute

GDAE is a research institute at Tufts University dedicated to promoting a better understanding of how societies can pursue their economic goals in an environmentally and socially sustainable manner. GDAE pursues its mission through original research, policy work, publication projects, curriculum development, conferences, and other activities. The “GDAE Working Papers” series presents substantive work-in-progress by GDAE-affiliated researchers.

We welcome your comments, either by email or directly to the author or to GDAE:
Tufts University, 44 Teele Ave, Medford, MA 02155; Tel: 617-627-3530; Fax: 617-627-2409; Email:
gdae@tufts.edu; Website: <http://ase.tufts.edu/gdae>.

Recent Papers in this Series:

- 14-01 [Prices and Work in The New Economy](#) (Neva Goodwin, March 2014)
- 13-04 [Can We Feed the World in 2050? A Scoping Paper to Assess the Evidence](#) (Timothy A. Wise, September 2013)
- 13-03 [Population, Resources, and Energy in the Global Economy: A Vindication of Herman Daly’s Vision](#) (Jonathan M. Harris, February 2013)
- 13-02 [Green Keynesianism: Beyond Standard Growth Paradigms](#) (Jonathan M. Harris, February 2013)
- 13-01 [Climate Impacts on Agriculture: A Challenge to Complacency?](#) (Frank Ackerman and Elizabeth A. Stanton, January 2013)
- 12-07 [Poisoning the Well, or How Economic Theory Damages Moral Imagination](#) (Julie A. Nelson, October 2012)
- 12-06 [A Financial Crisis Manual: Causes, Consequences, and Lessons of the Financial Crisis](#) (Ben Beachy, December 2012)
- 12-05 [Are Women Really More Risk-Averse than Men?](#) (Julie A. Nelson, September 2012)
- 12-04 [Is Dismissing the Precautionary Principle the Manly Thing to Do? Gender and the Economics of Climate Change](#) (Julie A. Nelson, September 2012)
- 12-03 [Achieving Mexico’s Maize Potential](#) (Antonio Turrent Fernández, Timothy A. Wise, and Elise Garvey, October 2012)
- 12-02 [The Cost to Developing Countries of U.S. Corn Ethanol Expansion](#) (Timothy A. Wise, October 2012)
- 12-01 [The Cost to Mexico of U.S. Corn Ethanol Expansion](#) (Timothy A. Wise, May 2012)
- 11-03 [Would Women Leaders Have Prevented the Global Financial Crisis? Implications for Teaching about Gender, Behavior, and Economics](#) (Julie A. Nelson, September 2012)
- 11-02 [Ethics and the Economist: What Climate Change Demands of Us](#) (J. A. Nelson, May 2011)
- 11-01 [Investment Treaty Arbitration and Developing Countries: A Re-Appraisal](#) (Kevin P. Gallagher and Elen Shrestha, May 2011)
- 10-06 [Does Profit-Seeking Rule Out Love? Evidence \(or Not\) from Economics and Law](#) (Julie A. Nelson, September 2010)
- 10-05 [The Macroeconomics of Development without Throughput Growth](#) (Jonathan Harris, September 2010)
- 10-04 [Buyer Power in U.S. Hog Markets: A Critical Review of the Literature](#) (Timothy A. Wise and Sarah E. Trist, August 2010)
- 10-03 [The Relational Economy: A Buddhist and Feminist Analysis](#) (Julie A. Nelson, May 2010)
- 10-02 [Care Ethics and Markets: A View from Feminist Economics](#) (Julie A. Nelson, May 2010)

View the complete list of working papers on our website:
http://www.ase.tufts.edu/gdae/publications/working_papers/index.html