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The optimal material threshold: Toward an economics of sufficiency

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'He who knows he has enough is rich'

Lao Tzu

Abstract

This paper begins by reviewing the empirical studies that have examined the correlation between income and self-reported happiness. The evidence suggests that once people have their basic material needs adequately met, the correlation between income and happiness quickly begins to fade. The analysis proceeds to consider the various explanations for this so-called 'income-happiness paradox,' and it also considers the radical implications this paradox has for people and nations that are arguably overconsuming. The paper concludes by outlining what will be called an 'economics of sufficiency,' drawing on degrowth and steady-state economics.

Keywords: Income-happiness paradox; sufficiency; degrowth; steady-state; voluntary simplicity.

JEL Codes: A14; I31; O11

1. Introduction

Increasing material wealth has been, and remains, one of the dominant goals of humankind – perhaps *the* dominant goal, even if for most people historically it was a goal that would never be realised. Given the extremely low material standards of living endured by most people throughout history, and indeed, by great multitudes around the world even today, the desire for more wealth is hardly surprising. When people are hungry, they understandably desire more food; when people are cold, warmer clothing and adequate housing are critically important; when people are ill, they naturally want access to basic medical supplies; etc. In conditions of material destitution, the pursuit of more material wealth seems wholly justifiable.

But what about those of us in the highly developed regions of the world who generally have our basic material needs for food, shelter, clothing, etc., adequately met, and who even have some discretionary income to purchase things like alcohol, microwaves, non-essential clothing, takeout food, movie tickets, books, and even the occasional holiday? In these relatively comfortable material circumstances, is more material wealth a goal for which we should still be striving? Or should we now be dedicating more of our time and energy to other, less materialistic pursuits? In other words, when it comes to material wealth – money, possessions, assets, etc. – how much is actually needed to live a meaningful, free, and happy life?

These questions are of the highest importance, today more than ever before. At a time when Earth's ecosystems are already trembling under the weight of overconsumption (MEA, 2005), increasing the consumption levels of those who are already materially well off seems to be a highly questionable objective, despite it being an objective whose legitimacy is widely taken for granted. Furthermore, the extent of global poverty strongly suggests that the wealthier sectors of the global population (say, the richest one billion people) should restrain their

¹ Office for Environmental Programs

consumption in order to leave more resources for those in much greater need. This is especially so given that the global population is expected to reach 9 billion by mid-century. We could call these the 'ecological' and 'social justice' arguments for consuming less.

In recent decades, however, a large body of sociological and psychological research has emerged which indicates that people living high consumption lifestyles might actually find that *it is in their own, immediate self-interest to consume less*, irrespective of the moral arguments for reduced consumption. Given the urgency with which overcoming societies need to reduce their consumption, an argument from 'self-interest' should be taken very seriously indeed, for the reason that such an argument may prove to be more persuasive than more 'moralistic' arguments. On that basis, this paper explores whether, or to what extent, it is in the self-interest of people in the global consumer class to voluntarily embrace lifestyles of reduced and restrained consumption. This will strike some people as a counter-intuitive hypothesis, at best, but it will be seen that the evidence indicates that such an intuition may well be based on false assumptions.

The analysis begins by reviewing the empirical studies that have examined the correlation between income and self-reported happiness. While the scholarly debate is far from settled, the weight of evidence suggests that once people have their basic material needs adequately met, the correlation between income and happiness quickly begins to fade. This has been called the 'income-happiness paradox,' because it contradicts the widely held assumption that more income and more economic growth will always contribute positively to human wellbeing. After reviewing the empirical literature, the analysis proceeds to consider the various explanations for this so-called 'paradox,' and it also considers what implications this paradox might have for people and nations that are arguably overconsuming. The paper concludes by outlining what will be called an 'economics of sufficiency,' drawing on degrowth and steady-state economics.

2. The income-happiness paradox: is more always better?

It is often assumed that income growth will always contribute positively and directly to human wellbeing. The following inquiry considers what empirical evidence exists for this assumed correlation, in following three situations: (1) across nations; (2) between individuals within a nation; and (3) over time. This scientific literature will be used to assess whether, or to what extent, individuals who are leading high consumption lifestyles could reduce their consumption while maintaining or even increasing their quality of life. The macro-economic implications of this literature will also be explored.

2.1 Measuring human wellbeing

For many decades now social scientists have been using surveys to assess empirically the wellbeing of human beings in different places, situations, and times (Easterlin, 1974; Diener, 1999). These surveys have been crafted in a variety of ways, asking such questions as, 'Taken all together, how happy would you say you are: very happy, quite happy, not very happy, or not happy at all.' Another prominent approach involves asking people to consider such statements as 'The conditions of my life are excellent' and then asking them to provide a response from 1-7 ranging from 'strongly agree' to 'strongly disagree.' Scientists have also sought to measure human wellbeing using a number of different methods – for example, using physiological and neurobiological indicators, observing social behaviour, and non-

verbal behaviour – but prominent researchers Bruno Frey and Alois Stutzer (2002, p. 26) conclude: “Self-reported happiness has turned out to be the best indicator of happiness. Extensive research has shown that people are capable of consistently evaluating their own state of wellbeing.” The following analysis proceeds on that basis.

A variety of terms has been used to denote overall wellbeing, including ‘happiness,’ ‘utility,’ ‘subjective wellbeing,’ ‘reported wellbeing,’ and ‘life satisfaction.’ The following analysis will follow Frey and Stutzer (2002) in using these terms interchangeably. It should be noted, however, that some recent work has drawn a distinction between two aspects of subjective wellbeing, as Daniel Kahneman and Angus Deaton (2010, p. 16489) explain:

Emotional wellbeing refers to the emotional quality of an individual's everyday experience – the frequency and intensity of experiences of joy, stress, sadness, anger, and affection that make one's life pleasant or unpleasant. Life evaluation refers to the thoughts that people have about their life when they think about it.

While this distinction is valid, most studies into wellbeing are based on ‘life evaluation’ surveys, rather than ‘emotional wellbeing’ assessments, and so the former approach should be assumed for the purposes of the following literature review.

Although surveys on happiness, life evaluation, etc. cannot provide an exact accounting of a notion as complex as ‘human wellbeing,’ if their results are received critically and cautiously then they can still provide a good deal of insight into the state of human wellbeing and provide valuable information with which individual, social, economic, and political decisions can be made (Kruger and Schkade, 2008; Diener et al, 2009; Bok, 2010). It would be quite unjustified to ignore the vast empirical research into the state of human wellbeing simply because the subject of wellbeing defies exact accounting. It would be especially unjustified given that in recent years a vast amount of research has been dedicated to this subject², suggesting that these studies ought to be taken seriously, despite the fact that there is “still more work to be done” (Diener and Biswas-Diener, 2009).

2.2 The correlation between Income and wellbeing across nations

There is now a substantial body of research that has assessed the correlation between income and wellbeing across nations (Diener et al, 2010). If ever there were people who seriously subscribed to the romantic notion of poor nations being happier than rich nations, rigorous studies over recent decades have convincingly dispelled such a myth. On average, persons living in rich countries are demonstrably happier than those living in the poorest countries. This unsurprising result has been established by Ed Diener and colleagues (2009) in an extensive study covering 55 nations. Their study was based on data from the *World Values Survey*, which is one of the best sources for international comparisons of life satisfaction over such a large number of countries. Many other studies, comparing various sets of nations, have found the same positive association between per capita income and life satisfaction (Deaton, 2008).

When the results of these studies are illustrated graphically, however, with average per capita income in a nation (across the horizontal axis) and average life satisfaction (on the

² Kruger and Schkade (2008) note that between 2000 and 2006, 157 scholarly articles and numerous books have been published in the economics literature alone using data on life satisfaction or subjective wellbeing. See also, Diener, ‘Subjective Well-Being,’ (reviewing over 300 studies on wellbeing).

vertical axis), a curious relationship is observable. While life satisfaction indeed rises with income up to a point, many researchers have observed a distinct *curvilinear* relationship between the two variables, suggesting that increases in income have a more or less direct and positive impact on life satisfaction at low levels of income, but beyond a surprisingly modest threshold point the correlation between income and life satisfaction weakens significantly (Inglehart and Klingemann, 2000). In one of the most comprehensive reviews of this body of literature, Frey and Stutzer (2002, p.75) point out that “there is no sizeable correlation between wealth and satisfaction with life above an average income level of US\$10,000.” This is not to suggest, necessarily, that there is no correlation at all above that surprisingly low level, only that income above that level has a diminishing marginal utility (Layard et al, 2008; Inglehart, 1996). That said, some have indeed argued that beyond a certain level the correlation is actually non-existent (Easterlin, 1995) although this remains a matter of contention (Deaton, 2008; Stevenson and Wolfers, 2008), and is likely to remain contentious (Diener, Helliwell, and Kahneman, 2010).

When comparing only the richest nations, however – which are the focus of this paper – the correlation between income and life satisfaction is evidently negligible. Clive Hamilton, for example, has studied data on the richest 17 nations, and he found that “there is no relationship at all between higher incomes and higher reported appreciation of life” (Hamilton, 2003, p.26). Similarly, Richard Layard (2005), in his well-documented text, *Happiness: Lessons from a New Science*, concludes: “If we compare the Western industrial countries, the richer ones are no happier than the poorer ones.” In a recent study, Layard and his colleagues (2010) provide further evidence for this position and rigorously respond to their critics (Deaton, 2008; Stevenson and Wolfers, 2008). This new study essentially corroborates Ronald Inglehart’s (1996, p.509) thesis that “although economic gains apparently make a major contribution to subjective wellbeing as one moves from societies at the subsistence level to those with moderate levels of economic development, further economic growth seems to have little or no impact on subjective wellbeing.” And as another commentator notes, even people who argue that economic growth still brings happiness in prosperous countries “often find that the rate of increase is very slight” (Bok, 2010, p. 14).

To those people or governments who assume that income per capita is a proxy for social progress, these research findings present a challenging anomaly. Indeed, it is suggested that they provide credible grounds for doubting whether growth in Gross Domestic Product (GDP) should still be a dominant policy objective for rich nations, since it would seem getting richer is no longer contributing much, if anything, to wellbeing (Jackson, 2009). After reviewing more than one hundred scholarly studies, Ed Diener and Martin Seligman (2004, p. 1) conclude:

economic indicators were extremely important in the early stages of economic development, when the fulfilment of basic material needs was the main issue. As societies grow wealthy, however, differences in wellbeing are less frequently due to income, and are more frequently due to factors such as social relationships and enjoyment at work.

When considering this body of social research one must, of course, allow for the possibility that any perceived correlation between income and happiness may be produced by factors other than income, as such. To some extent this will almost certainly be the case. Frey and Stutzer (2002, p. 75) note, in particular, that “countries with higher per capita incomes tend to have more stable democracies than poor countries” and so “it may well be that the seemingly

observed positive association between income and happiness is in reality due to the more developed democratic conditions.” Or perhaps the perceived association is actually due to more secure human rights or better average health. Controlling as far as possible for these and several other possibly misleading factors, Frey and Stutzer (2002, pp. 75-6) still hold that “there is substantial evidence that it is indeed income that produces subjective wellbeing, at least for countries below a certain threshold of wealth.”

Once that threshold has been crossed, however – which we have seen the rich Western nations already seem to have crossed – evidence suggests that further growth in GDP has a fast diminishing marginal utility. What this means, in other words, is that beyond the threshold, income per capita is an increasingly poor indicator of human wellbeing. This is a cause for concern because, despite this evidence, rich nations persist in using the growth model in their decision-making, consciously or unconsciously (Purdey, 2010), and this means that they continue to endorse and seek growth, and structure institutions accordingly, even though growth has seemingly stopped contributing significantly to their wellbeing.

2.3 The correlation between income and wellbeing within a nation

Within any nation, are rich people happier? One might have thought the answer would be simple. When people have lots of money, they seem to have more opportunities to achieve whatever they desire: they can purchase more luxurious consumer goods and services; they can afford better healthcare, receive a better education, and are more likely to enjoy higher status, etc. And if for some reason rich people think that living in poverty will make them happier, they are free to dispose of their money at no cost (Frey and Stutzer, 2002). These are no doubt the kinds of reasons that led the great utilitarian economist, Jeremy Bentham (2005, p.468), to assert: “Money is the most accurate measure of the quantity of pain or pleasure that a person can be made to receive... It is from his money that a man derives the main part of his pleasures.” But are things that simple?

It seems not. When we actually consider the extensive empirical evidence on this subject, rather than just uncritically accepting the perhaps ‘commonsensical’ assumptions of conventional economics, we find a much more nuanced relationship between income and wellbeing. The evidence generally confirms that, on average, rich people report higher levels of life satisfaction than poor people (Frey, 2008; Kahneman and Deaton, 2010). But upon closer inspection, the research shows that, although more money increases wellbeing at low levels of income, with further increases in income there soon comes a point when the correlation between income and wellbeing tends to fade, at times even to vanishing point (Lane, 2000).

The positive affects of increasing income seem to be stronger within the poorest nations, for the reason that more people subsist in conditions of material destitution. But, as David Myers (2000a, p. 131) puts it, “within affluent countries, where nearly everyone can afford life’s necessities, increasing affluence matters surprising little.” Similarly, Frey and Stutzer (2002, p. 83) conclude that “[a]t low levels of income, a rise in income strongly raises wellbeing. But once an annual income of about US\$15,000 has been reached, a rise in income level has a smaller effect on happiness.”

The diminishing correlation between income and wellbeing within nations has also been observed by Inglehart, in his 16-nation study of the United States, Canada, and Western Europe, where he concludes that the correlation between income and happiness is

“surprisingly weak (indeed, virtually negligible)” (Inglehart, 1990, p. 242). Commenting on this weak or even non-existent relationship between income and happiness, Michael Argyle (1999, p. 353) pays tribute to the theory of declining marginal utility of money: “The reason for the rather weak effect of income [on happiness] in the USA may be that many Americans are above the level at which income affects happiness.” It seems this reasoning now applies to most if not all the advanced capitalist societies (Lane, 2000; Layard, 2005).

The central insight here, broadly expressed by Robert Lane (2000, p. 16), is that “the rich are no more satisfied with their lives than the merely comfortable, who in turn are only slightly, if at all, more satisfied with their lives than the lower middle classes.” And there is now considerable research on this issue. It seems that once a moderate threshold has been reached – which some theorists argue is essentially when ‘basic needs’ have been satisfied (Di Tella and MacCulloch, 2010) – a higher income will have little impact on life satisfaction. The point is summarised well by John Talberth (2008, p. 10):

An increasingly large and robust body of hedonics research confirms what people know intuitively: beyond a certain threshold, more material wealth is a poor substitute for community cohesion, healthy relationships, a sense of purpose, connection with nature, and other dimensions of human happiness.

It is suggested that this research casts further doubt on the received wisdom that increases in income per capita will benefit people in affluent societies. It even suggests that some people could increase their wellbeing by directing less of their time and energy toward materialistic pursuits, and more time toward non-materialistic pursuits – a point to which we will return.

2.4 The correlation between income and wellbeing over time

A final way to assess the correlation between income and wellbeing is to compare the wellbeing of an individual or a society over different points in time, in different financial circumstances. If we assume that increasing per capita incomes will have a direct and positive bearing on life satisfaction, we would expect to see this relationship reflected over time as an individual or a society gets richer. Again, there is a large and growing empirical literature providing insight into this issue (e.g. Hinte and Zimmerman, 2010).

As documented above, rich nations tend to report higher levels of subjective wellbeing than the poorest nations, where poverty is widespread. From this it can be fairly inferred that as a poor nation’s economy grows over time and secures more basic material needs for its inhabitants, the wellbeing of those inhabitants also tends to rise.³ This initially strong correlation between income and wellbeing is arguably the main reason the growth paradigm is so deeply entrenched today. It is no wonder, given the many benefits derived from economic growth since the Industrial Revolution, that the imperative to growth structures our politics, our outlook, even our identities. And since increasing income tends to increase wellbeing significantly when nations or individuals are very poor, it is easy to infer that, beyond poverty, further income will keep on increasing wellbeing in the same direct and positive fashion. That inference, however, turns out to be false.

³ While this suggests that there are powerful arguments for more economic growth in countries where a large proportion of the population lives in poverty, Clive Hamilton (2003: 27) is correct to warn that ‘this should not be construed as an unalloyed endorsement of growth at all costs. The nature of the growth process matters.’

In the United States and Britain, to begin with two of the most notorious examples, research shows that the 'income-happiness paradox' has developed (Blanchflower and Oswald, 2004). The 'paradox,' so-called, is this: over the last half century, average per capita incomes have grown several times over, but despite this tremendous rise in the material standard of living, inhabitants are slightly less happy or no more happy today than they were fifty years ago. Similarly, if we look to Japan, evidence indicates that between 1958 and 1991 real GDP per capita increased six-fold, yet reported satisfaction with life did not change at all (Frey, 2008, p. 39; Layard et al, 2010).

Let us dwell on these points for a moment. Three of the richest economies in the world have grown considerably over the last fifty years and yet the wellbeing of their inhabitants, which surveys have quite consistently recorded, has tended to stagnate (or, in the case of the United States, decline). In other words, the affluence delivered by growth in GDP within these nations has evidently stopped serving human wellbeing. *Getting richer is no longer making people happier*. As mentioned above, this phenomenon has been labelled the 'income-happiness paradox,' a paradox because it fundamentally contradicts what conventional 'more is better' economics would have predicted. And it calls for reflection: "If the economy is up," ask Clifford Cobb et al (1995, p. 1), "why is America down?" In his review of the scholarly literature, Hamilton (2003, p. 30) is surely right to insist: "The implications of the figures cannot be brushed aside: if a sharp rise in personal incomes does not result in any increase in personal life satisfaction, why do we as societies give such enormous emphasis to economic growth?"

Evidently, it is not just the USA, Britain, and Japan that must confront this deeply challenging state of affairs. Many other developed societies are showing distinct signs of confronting a very similar paradox, as evidenced by the recent studies based on the 'extended accounts' of the Index for Sustainable Economic Welfare (ISEW) or the Genuine Progress Indicator (GPI) (Lawn, 2006). These analytical tools, among others (e.g. the Human Development Index, the Happy Planet Index, the Measure of Domestic Progress, etc.), have been developed in response to growing discontent with the inadequacies and narrowness of GDP as a measure of welfare (see Stiglitz, Sen, and Fitoussi, 2010). As much more nuanced measures of welfare, the ISEW and the GPI take into consideration extremely important social and environmental factors that GDP, as a measure of welfare, does not and cannot reflect. For example, the ISEW and the GPI begin with total private consumption expenditure and then make deductions for such things as resource depletion, pollution, income inequality, loss of leisure, 'defensive expenditures' etc, and make additions for such things as public infrastructure, volunteering, and domestic work (Daly and Cobb, 1989). The aim of these indexes is to measure genuine progress as accurately as possible, not just total market activity.

What, then, do these 'extended accounts' of welfare show? Avner Offer (2006) helpfully reviews the key findings of the ISEW in relation to many nations. Offer shows that the American and British ISEW declined significantly between 1975 and 1990, even though GDP grew significantly. Furthermore, ISEW measures are now available for Australia, Austria, Chile, Germany, Italy, the Netherlands, Sweden, as well as the UK and the USA. Offer (2006, p. 19) reports that, "All except Italy record ISEW growth until the 1970s, with stagnation or decline afterwards." Other studies suggest that Italy is also in decline (D'Andrea, 1998).

Although there is still room to improve the ISEW and the GPI, it is suggested that they are undoubtedly better measures of national progress than GDP (Lawn, 2003, 2005). It is

heartening to observe that these types of extended accounts are approaching official recognition, albeit slowly (Stiglitz, Sen, and Fitoussi, 2010). The message they convey, however, is a rather disconcerting one, especially for the developed nations. After all, they show that economic growth since about the mid-1970s has done little or no good in terms of aggregate welfare. On that basis, Offer (2006, p. 20) seems justified in concluding that “the pursuit of further growth has been irrational. It is only myopia and habit which allow it to continue in the face of negative welfare returns.”

Interestingly, this message is even being acknowledged by some conservative political parties, which typically have been the bastion of ‘more is better’ growth economics. In 2007, for example, the UK Conservative Party issued a landmark report, *Blueprint for a Green Economy* (Gummer and Goldsmith, 2007), which is one of the first attempts by a major political party in the industrialised world to refocus attention away from economic growth and towards a much broader and more inclusive conception of wellbeing. In a startling admission, the authors (Gummer and Goldsmith, 2007, p. 8) state:

beyond a certain threshold – a point which the UK reached some time ago – ever increasing material gain can become not a gift but a burden. As people, it makes us less happy, and the environment upon which all of us, and our economy, depend is increasingly degraded by it.

More recently, British Prime Minister, David Cameron – hardly known for his progressive economics – has stated, “It’s time we admitted that there’s more to life than money and its time we focused not just on GDP but on GWB – general wellbeing.”⁴ Of course, this has remained at the level of rhetoric merely, but it does indicate that cultural attitudes toward income growth may be shifting toward less materialistic perspectives.

In light of all this evidence, the question about the effects of rising incomes on wellbeing over time can be answered as follows: getting richer over time makes people and societies better off *up to a point*, but once a moderate level of wealth has been attained – a level which the developed nations, as detailed above, already seem to have surpassed – getting richer makes little, if any, positive difference to wellbeing.

3. Explaining the income-happiness paradox

Before exploring the implications of these findings, it is important to consider the question of why it might be that, beyond a moderate threshold, more income ‘paradoxically’ stops contributing much to wellbeing. Understanding this paradox, so-called, might provide some insight into how best to respond to it. Seven of the more prominent explanations for the ‘income-happiness paradox’ are outlined below, none of which are mutually exclusive.

3.1 Relative income vs. absolute income

Some theorists, going at least as far back as Thorstein Veblen (1965 [1899]), have highlighted the fact that once a person’s basic material needs are satisfied, *relative* income often has much more effect on subjective wellbeing than *absolute* levels of income. This issue has been the subject of many sociological studies (e.g. Ball and Chenova, 2008;

⁴ See <<http://www.guardian.co.uk/politics/2010/nov/14/david-cameron-wellbeing-inquiry?intcmp=239>> at 16 November 2010.

Layard et al, 2010), and the studies have tended to show that, not so far beyond the poverty line, people generally assess their individual wellbeing in relation to how others in a similar social group are doing, such that if our incomes rise relative to those around us we are likely to become happier; but if everyone else's incomes rise at the same time as our own, we are less likely to become happier. Moreover, if your increase in income causes envy in those around you, your increased happiness (through status) might be offset by dissatisfaction in others, so that aggregate happiness across the nation may not change at all (Jackson, 2006, p. 10). For these reasons, there may come a time when economic growth is wasteful or self-defeating, much like when everyone stands on tip toes in a crowd and nobody's position improves. Status competition, after all, is a zero-sum game, in the sense that if someone's status increases, someone else's must have relatively decreased. Many theorists argue that this struggle over social positioning is why economic growth has stopped contributing much to wellbeing in affluent societies (Hirsch, 1976; Layard et al, 2010).

3.2. Hedonic adaptation

Other theorists point to the impact of 'hedonic adaptation' as the cause, or a contributing cause, of the income-happiness paradox (Di Tella and MacCulloch, 2010). The central idea here is that as people get richer they generally become more accustomed to the pleasure of the goods and services their new income affords them. Accordingly, if people want to maintain the same level of happiness, they must achieve ever-higher levels of income in the future just to stay in the same place, hence the metaphor of the 'consumerist treadmill' (Jackson, 2006, p. 10). As Myers (2000b, p. 60) notes, "Thanks to our capacity to adapt to ever greater fame and fortune, yesterday's luxuries can soon become today's necessities and tomorrow's relics." This phenomenon of hedonic adaptation, just like the struggle over social positioning, is nullifying the projected or anticipated benefits of income growth in rich nations.

3.3 Rising expectations

In a similar fashion, the benefits of income growth can be nullified if people continually raise their material expectations about what is needed to attain contentment. One example of this is known as the 'Diderot Effect' (named after the philosopher Denniss Diderot who first wrote about it). This phenomenon refers to how consumer purchases can induce the desire for other purchases, which can induce further desires, and so on. The purchase of some new shoes looks out of place without a new outfit to match; a new car looks out of place parked in front of a shabby old house; painting the lounge can make the kitchen look even older; and replacing the sofas tempts one to replace the chairs too. This striving for uniformity in cultural standards of consumption is known as the 'Diderot Effect,' and it can function to lock people onto a consumerist treadmill that has no end and attains no lasting satisfaction.

Richard Easterlin (2001: 465) argues that "people project current aspirations to be the same throughout the life cycle, while income grows. But since aspirations actually grow along with income, experienced happiness is systematically different from projected happiness. Consequently, choices turn out to be based on false expectations." This type of reasoning prompted Easterlin (1995) to ask, "Will raising the incomes of all increase the happiness of all?", and he answered this question in the negative, on the grounds that the material norms on which judgements of wellbeing are made tend to increase in the same proportion as the actual income of the society. Derek Bok (2010, p. 13) makes essentially the same point when he suggests that "people's aspirations are forever beyond their reach, leaving them

perpetually unsatisfied.” Once again, the anticipated benefits of increased income will never be realised if material expectations keep rising.

3.4 Overwork

Another reason why income growth has generally stopped contributing to wellbeing in affluent societies can be attributed to the fact that many of those societies have developed cultures of overwork, despite the fact that technological advances have made the workforce considerably more productive per hour than in earlier eras. In terms of wellbeing, Charles Siegel (2008, p. 8) poses the critical question: “Should we take advantage of our increasing productivity to consume more or to have more free time?” If people keep raising their material standards of living every time they come into more money – through a pay rise, for example, or through some new technology which increases productivity per hour – working hours will never decrease and may even rise. Indeed, many Westerners, especially North Americans, Britons, and Australians, are working longer hours today than they were in the 1970s, despite being considerably more productive (de Graaf, 2003; Hamilton and Denniss, 2005). Generally speaking, they have directed all their wealth and productivity gains into consuming more and have not taken any of those gains in terms of increased free time. Arguably, quality of life could have been increased if more of those productivity gains were converted into more time and less consumption.

To make matters worse, there are structural biases in many affluent societies that function to promote overwork (i.e. working hours that are not ‘optimal’ or ‘utility maximizing’), such as laws that treat the 40-hour work week as ‘standard’ or which exclude part-time workers from many of the non-pecuniary benefits enjoyed by those who work full-time (Robinson, 2007). The effect of these structural biases is essentially to force or coerce many people to work longer hours than they want or need to, which gives rise to cultures that tend to over-consume resources and under-consume leisure. This might lead to higher GDP per capita, but at the cost of quality of life and planetary health (Hayden, 1999).

3.5 The high price of materialism

Many ancient wisdom traditions, both ‘philosophical’ and ‘spiritual,’ tell us that materialistic values can be dangerous; that focusing on attaining material possessions and social renown can detract from what is meaningful about life (Vanenbroeck, 1991). Tim Kasser (2002, 2009) has explored the science beneath such ancient wisdom, and he shows that research on the effects of materialism yields clear and consistent findings: “People who are highly focused on materialistic values [i.e. people who orientate their lives around the acquisition of money, fame, and image] have lower personal wellbeing and psychological health than those who believe that materialistic pursuits are relatively unimportant” (Kasser, 2002, p. 22). What is more, Kasser shows that these relationships have been documented in samples of people ranging from the wealthy to the poor, from teenagers to the elderly, and from Americans to Russians, from Australians to South Koreans. If this is true then today’s growth-obsessed, consumer cultures are inculcating people with values that are not conducive to their own wellbeing. After reviewing the evidence, Kasser concludes that when people in affluent societies subscribe to materialistic values and organise their lives around the pursuit of wealth and possessions, “they are essentially wasting their time as far as wellbeing is concerned. By concentrating on such a profitless style of life, they leave themselves little opportunity to pursue goals that could fulfil their needs and improve the quality of their lives” (Kasser, 2002, pp. 47-8).

3.6 The limits to purchasing happiness

A related reason for why income does not contribute much to wellbeing in affluent societies concerns the limits of market consumption. Whatever it is that makes life meaningful or fulfilling, evidently it is not the limitless consumption of goods and services (Scitovsky, 1976; Csikszentmihalyi, 1999). Robert Lane expresses the idea as follows: “the richer the society and its individuals become, *the less purchasable are the goals that bring them happiness* – although they may still pursue wealth with their accustomed vigor” (Lane, 2000, p. 63, emphasis added). And, indeed, continuing the pursuit seems to be the way of many individuals in affluent societies today, as Kasser (2002, p. 59) explains: “The sad truth is that when people feel the emptiness of either material success or failure, they often persist in thinking that more will be better, and thus continue to strive for what will never make them happy.” This ‘sad truth’ arguably manifests itself politically in affluent societies as an insatiable desire for economic growth.

3.7 Inequality is socially corrosive

One final explanation for why per capita income growth is failing to contribute much to wellbeing in rich countries is because in recent decades, especially, the rewards of growth have gone mainly to the richest few percent of the population. Kate Picket and Richard Wilkinson (2010) have discussed this issue in depth, presenting an impressive body of evidence showing the social benefits of a broad-based distribution of wealth. These studies show that great economic inequality in a society is socially corrosive – a point that supports a more egalitarian distribution of wealth in societies where wealth is highly polarized. In short, beyond a certain threshold, it seems that distributive equity matters more, in terms of overall human wellbeing, than continuous growth.

4. The radical implications of the income-happiness paradox

At first instance the widespread assumption that real income growth will always contribute positively to human happiness seems intuitively plausible. As noted earlier, money provides people with power to purchase some of the things that they desire, whether those things are goods (big houses, nice clothes, expensive food, etc.) or services (hired help, luxurious holidays, massages, etc.). The advertising industry plays on this materialistic assumption in highly sophisticated and manipulative ways, implicitly or explicitly reinforcing the idea that people need this or that product if they want to be satisfied with life (PIRC, 2011). If it were the case that subjective wellbeing always increased in proportion with real income growth, this would provide some grounds for arguing that human beings have an ongoing interest in being materialistic, and that governments are correct to treat growth in GDP as a proxy for social progress. But the evidence reviewed above shows that such arguments are either false or in need of significant qualification.

We have seen that income growth tends to contribute positively and directly to human wellbeing when people and societies have very low levels of material wealth. But once basic material needs have been met – as they generally have been in the most developed regions of the world – further increases in income have diminishing marginal returns. The evidence even suggests that there comes a point – a threshold point which the most developed nations have already crossed – where the anticipated benefits of growth are nullified by social and psychological phenomena such as status competition, hedonic adaptation, rising expectations, etc. While it is true that within a nation, the richest people are generally happier

than those less well off, it seems that once a moderate level of wealth has been attained, further increases in wealth play only a minimal role raising wellbeing. What this means is that if people whose basic material needs have been met continue to dedicate their lives to the pursuit of more and more wealth, they may find that they are essentially wasting their time so far as wellbeing is concerned. As Tim Jackson (2006, p. 10) puts it:

Far from making us happier... the pursuit of material things damages us psychologically and socially. Beyond the satisfaction of our basic material needs for housing, clothing and nutrition, the pursuit of material consumption merely serves to entrench us in unproductive status competition, disrupts our work/life balance and distracts us from those things that offer meaning and purpose to our lives.

When considering the body of evidence reviewed above, it is commonplace to acknowledge that relatively affluent individuals and societies are unlikely to increase their wellbeing significantly by getting richer. The lesson typically drawn from this is that those individuals and societies should not seek *further* income growth. Given that the world economy today is governed by the profit-maximising logic of growth economics, this lesson is a challenging one.

It can be argued, however, that the implications of the literature are more radical still. After all, the evidence does not merely show that the richest nations are consuming at the material threshold in an optimal way. That is to say, the richest nations are not consuming 'just enough' to maximise their wellbeing. Instead, the sociological evidence (to say nothing of the ecological evidence) implies that the richest nations, and many people within those nations, have actually gone *beyond* the material threshold; they are now dedicating 'too much' of their time and energy toward materialistic pursuits (Max-Neef, 1995; Lawn and Clarke, 2010). This implies that those nations and individuals who have gone beyond the optimal material threshold could actually *increase their wellbeing by reducing their consumption*. That is the central thesis this paper is advancing.

For example, if people in affluent societies were to rethink their relationships with money and reduce their outgoings, they might be able to free up more time for things that truly make them happy, such as more time with friends and family, or more time to engage in one's private passions. This type of reasoning has even led one theorist, Kate Soper (2008), to coin the term 'alternative hedonism,' in order to highlight the many joys and pleasures that come with living a simpler, post-consumerist existence.

Could it be that many people in affluent societies can actually live better, happier, and more pleasurable lives by reducing and restraining their income and consumption?

5. Toward an economics of sufficiency

Fortunately, we no longer need to rely on theories or abstract arguments to show that people can live well on less. A growing number of people in the 'voluntary simplicity' movement are choosing to reduce and restrain their consumption – not out of sacrifice or deprivation, but in order to be free, happy, and fulfilled in a way that consumer culture rarely permits (Alexander, 2009, 2011a). By limiting their working hours, spending their money frugally and conscientiously, growing their own vegetables, sharing skills and assets, riding bikes,

rejecting high-fashion, and generally celebrating life *outside* the shopping mall, these people are new pioneers transitioning to a form of life beyond consumer culture.

This post-consumerist social movement, it could be said, is exemplifying an 'economics of sufficiency,' one that seeks to attain 'enough' to live well, while resisting the counter-productive urge to increase consumption without limit. Given that overconsumption is the driving force behind many of today's social and ecological crises (Lane, 2000; Trainer, 2010), the emergence of a social movement that is increasing social wellbeing by embracing sufficiency in consumption is an omen whose potential can hardly be overstated.

Significantly, the largest multi-national survey analysis of the voluntary simplicity movement (Alexander and Ussher, 2012) reports that almost all participants in the movement are happier for embracing lifestyles of reduced or restrained income. Quite remarkably, only an insignificant amount (0.3%) said that they were 'less happy.' These results, which support the analysis above, are important because they indicate that a 'double dividend' can flow from reducing consumption, or even a 'triple' or 'quadruple' dividend, etc. (Jackson, 2005; Brown and Kasser, 2005; Kasser 2009). That is to say, the results suggest that the arguments for reduced consumption based on environmental, humanitarian, and population concerns, etc., are supported also by an argument based on increased happiness. People have a reason to live simply for their own sakes, the evidence suggests, but by doing so, it may be inferred, they are also likely to benefit others and the planet. If this is indeed so, it is extremely good news, because an argument based on 'self-interest' is likely to be more persuasive than arguments based on more 'moralistic' concerns arising from environmental or humanitarian concerns.

Of course, these results do not 'prove' that living simply will make people happier. But they do suggest that the overwhelming majority of participants in the voluntary simplicity movement are notably happier for living more simply. And this means that simpler living is providing many people with a viable and desirable alternative to higher consumption lifestyles – an alternative that other people may find that it is in their interest to explore also.

The most promising thing about this emerging social movement is that it may provide a solution to one of the greatest problems of our age – the problem of growth. Despite the global economy far exceeding the planet's sustainable limits (MEA, 2005), even the richest nations on the planet still seek to grow their economies further (Purdey, 2010). This growth imperative arises because our economies are dependent on growth to function, for when growth-based economies do not grow, people suffer – as evidenced by the ongoing Global Financial Crisis, especially in Europe. One is struck here by a painful contradiction arising from the need to consume *less* for ecological reasons, but consume *more* for the sake of a strong economy. Can this contradiction be resolved?

Perhaps, but only perhaps. If more people came to place self-imposed limits on their own consumption, rather than always seeking an ever-higher material standard of living, then this could well open up space to rethink the growth imperative that defines our economies. In other words, if an economics of sufficiency were ever embraced at the personal and social levels, there is no reason to think that an economics of sufficiency could not also arise at the macroeconomic level (Alexander, 2011b, 2012a). This may sound like science fiction to those who cannot think beyond the growth model. But times they are a-changing.

The following sections outline, in a preliminary way, the structure of what could be called a 'macroeconomics of sufficiency.' It will be argued that there are social, ecological, and even economic reasons to support the proposition that continuing growth in the developed nations is: (1) increasingly wasteful, and arguably counter-productive, in terms of social wellbeing; (2) ecologically unsustainable; and (3) uneconomic. So far as this analysis is correct, it arguably follows that an equitable downscaling of production and consumption – or degrowth (Kallis, 2011, Alexander, 2012b) – is the most appropriate and desirable response to the failings of growth economics. This is especially so given that growth in the richest parts of the world has proven to be an extremely inefficient and environmentally unsupportable means of eliminating global poverty (Woodward and Simms, 2006).

5.1 Degrowth for social wellbeing

As we have seen, the social critique of growth holds that growth in GDP is often strongly correlated with wellbeing at low levels of per capita income, but that once a society attains a moderate level of wealth, further growth has little, if any, positive impact on overall wellbeing. This has significant implications for high income societies like those in the developed world today. Most notably, it suggests that those societies could dedicate considerably less time to producing and consuming goods and services without negatively affecting overall wellbeing. Indeed, it is likely that wellbeing would be positively affected if they did so, since a considerable amount of time and energy otherwise spent on wasteful production and consumption would be freed up for more meaningful and fulfilling activities. For this reason, some degrowth scholars argue that degrowth should not be considered a 'forced option' in the face of the ecological crisis; instead, degrowth should be seen as a choice to be made even without the crisis, 'simply to be human' (Fournier, 2008, p. 536).

Although trading money for time implies a lower material 'standard of living' (in terms of income/consumption), the above reasoning indicates that this would nevertheless lead to increased 'quality of life' (measured by subjective wellbeing). On that basis, it is argued that developed societies could increase overall wellbeing by initiating a degrowth process of planned economic contraction, in the sense of developing and implementing policies to reduce wasteful production and consumption and facilitate the exchange of money for time. To the extent that governments cannot be relied on to initiate this process, it follows that it must be driven from the grassroots (Trainer, 2010; Alexander, 2012a; Alexander, 2012c). Ideally, the degrowth process should continue until overgrown societies produce and consume to an optimal degree – not too much, not too little. Whether a society has attained this optimal social state, of course, may be forever contestable and unclear, but it is suggested that the notion of macroeconomic 'sufficiency' itself guards against the mistake of thinking that more production and consumption are always going to improve wellbeing (which is the defining mistake of the growth model). The notion of macroeconomic 'optimality' also provides the theoretical space needed to argue that a downscaling of production and consumption could increase wellbeing, which is indeed an aspect of the case for degrowth (Latouche, 2003).

5.2 Degrowth for ecological sustainability

The ecological critique of growth holds that the global economy already significantly exceeds the regenerative and absorptive capacities of Earth's ecosystems, a crisis driven by the developed nations which are demonstrably overconsuming their fair share of Earth's resources (Meadows et al, 2004). This situation is especially troubling since the poorest

nations still need to develop their economic capacities in some form simply to provide for themselves a dignified standard of living. In response to the argument that techno-efficiency improvements will 'decouple' growth from ecological impact – and thus allow for 'sustainable development' or 'green growth' – evidence shows absolute ecological impacts are still increasing, despite the relative decoupling achieved by techno-efficiency improvements (Jackson, 2009). For these reasons, it is argued that to achieve ecological sustainability, the developed nations need to initiate a degrowth process of planned economic contraction, in the sense of reducing the absolute level (not merely per unit level) of ecological impact caused by economic activity. Ideally, this process should continue until ecological sustainability has been achieved, at which point the developed nations should adopt a 'steady-state' economic model (Daly, 1996). In the poorest nations, a phase of clean, efficient, and equitable growth is still required to achieve a dignified standard of living – facilitated, ideally, by some global redistribution of wealth – but eventually those developing nations too will need to transition to a steady-state economy (Lawn and Clarke, 2010). The steady-state model is of a physically non-growing but qualitatively developing economy which is maintained by a sustainable rate of resource throughput. Within a steady-state economy, renewable resources would be harvested at rates that do not exceed regeneration rates; the rate of depletion of non-renewable resources would not exceed the rate of creation of renewable substitutes; and waste emission rates would not exceed the natural assimilative capacities of ecosystems into which they are emitted (Daly, 1990). These guiding principles would help ensure that an economy remains within the sustainable carrying capacity of the environment.

5.3 Degrowth for optimal macroeconomic scale

The economic critique of growth begins by pointing out that growth of an economy, measured by a rise in GDP, is not 'economic growth' unless the benefits of growth exceed the costs, all things considered. The critique then shows that most of the developed nations have entered or are entering a phase of 'uneconomic' growth (Daly, 1999); that is, a phase in which the costs of growth exceed the benefits, all things considered. This argument is based primarily on the extended accounts of the ISEW and GPI, discussed earlier, which are tools that seek to internalise many of the significant social and environmental externalities that GDP, as a measure of progress, fails to take into account. Since the ISEW and GPI indicate that the developed economies seem to have already exceeded their optimal macroeconomic scale, to achieve optimality those economies should initiate a degrowth process of planned economic contraction, a process which could be described as 'economic' degrowth. This would not involve deliberately reducing GDP per capita for its own sake, however, since degrowth for its own sake is no more sensible than growth for its own sake (Latouche, 2009, p. 7). Rather, degrowth for optimal macroeconomic scale would involve explicitly giving up the pursuit of growth and directly pursuing more specific welfare-enhancing objectives – such as eliminating poverty, lessening inequality, and protecting the environment – even if this led to lower GDP per capita. Planned economic contraction should continue until the costs are equal to the benefits, a situation which would represent an optimal macroeconomic scale and ideally would be maintained in the form of a steady-state economy.

This is the vision of a macroeconomics of sufficiency, and the purpose of this paper has been to provide some of its sociological foundations. The argument has been that it is possible for affluent nations, and many people within those nations, to increase quality of life by reducing and restraining consumption. At the personal and community levels, this involves rejecting consumerism and transitioning to lifestyles of voluntary simplicity. At the macroeconomic

level, it involves moving away from the dangerously flawed growth model of progress and implementing some degrowth process of planned economic contraction.

6. Conclusion

Over the last century, the vast majority of individuals in affluent societies have essentially been freed for the first time in history from the threat of material destitution and, indeed, now live lives of relative comfort (Offer, 2006). What this means is that these individuals could now be confronting honestly what the great economist John Maynard Keynes (1963, p. 362) called our 'permanent problem' – the problem of what to *do* with the radical freedom that material comfort provides. This paper has made no attempt to answer that question; a question which, in any case, we must each answer for ourselves. The analysis above does suggest, however, that the meaning of human existence does not and cannot consist in the consumption and accumulation of ever more material things. Perhaps that is obvious, but what then of growth capitalism?

In the apt verse of William Wordsworth: "Getting and spending, we lay waste our powers."

* * * * *

The motivating aim of this paper was to prompt self-reflection in the following terms: Could it be that it is now in our self-interest to voluntarily embrace 'simpler' lifestyles of reduced and restrained consumption? And could it be that it is also in the self-interest of developed nations to give up growth economics and transition by way of degrowth to a steady-state economy? In an age that glorifies consumption and fetishises growth as never before, these might seem like counter-intuitive proposals. But the growing voluntary simplicity and degrowth movements – which represent two complementary dimensions of an economics of sufficiency – are indicating that such intuitions may well be false.

Consume less, live more. Just perhaps this is a way of life whose time has come.

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The normative foundations of scarcity

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Abstract

The elevation of scarcity to the fundamental economic problem rests on some unstated normative assumptions. These include a political commitment to private property, a methodological commitment to not inquire about taste formation, and the idea that human welfare is roughly equivalent to preference satisfaction. The problem arises because current methodology is based on certain positivist principles, and needs revision in light of subsequent collapse of positivism.

1. Introduction

Foucault's research reveals that "modern human sciences (biological, psychological, social) purport to offer universal scientific truths about human nature that are, in fact, often mere expressions of ethical and political commitments of a particular society".¹ Our goal in this paper is to argue that the current grounding of economic theory in the apparently objective, neutral, and widely observable condition of scarcity is actually based on certain underlying methodological, ethical and political commitments.

Lionel Robbins (1932) argued the economics was not about "material welfare: the provision of goods to further prosperity and development" but rather, it was about "scarcity: the provision of goods to fulfill all wants", whether conducive to welfare or not. His arguments came to dominate the field, and drove earlier conceptions out of sight; see Cooter and Rapoport (1984) for details. Nearly all modern conventional textbooks use scarcity as the fundamental defining problem of economics. For instance, the opening paragraph of a microeconomics textbook by Perloff (2001) states that: "If each of us could get all of the food, clothing and toys we wanted without working, no one would study economics. Unfortunately, most of the good things in life are scarce – we can't all have as much as we want. Thus scarcity is the mother of economics".

Both logical positivism and Weber's idea that social science must be value-free strongly influenced the development of economic methodology in the early twentieth century. The full implications of the subsequent collapse of logical positivism have yet to be absorbed. Even deeper is the realization that facts and values often cannot be sharply separated. Even Quine, whose attack on the 'two dogmas' of empiricism was influential in destroying positivism, did not accept the idea that values were also involved in the formation and formulation, as well as acceptance and rejection, of scientific theories. Putnam (2002) provides a detailed exposition of these ideas, and shows how aesthetic and epistemic values of elegance, simplicity, coherence, power etc. are inevitably involved in the selection of scientific theories.

Some statements are clearly factual and objective, while others are clearly evaluative and normative. It does not follow that all sentences can be classified into one or the other category; see Mongin (2006) for several illustrations. Deeper examination, as in Hausman and McPherson (2006), shows that facts and values are entangled and cannot be separated in a large class of statements central to economic theories. As a whole, there has been only

¹This is a paraphrase of the entry for Michel Foucault in *Stanford Encyclopaedia of Philosophy* (accessed 23 February 2008): <http://plato.stanford.edu/entries/foucault/>; it has since been revised, but because it so aptly describes our main theme in this paper, we have retained the quote.

peripheral recognition of these issues among economists. A recent survey by Hands (2009) concludes that: "So most modern economists generally consider rational choice theory to be a positive, not a normative, theory; endorse the position that normative statements/concepts should be prohibited from scientific economics; and equate normative theories/presuppositions with ethics." Learning to think without the empiricist dogmas that have been part of our training is a real challenge, with correspondingly great potential promise. Paraphrasing Putnam (2002), developing a methodology that takes into account the collapse of positivism as well as the collapse of the fact/value distinction will open up "a whole new field of intellectual possibilities in every important area". In this paper, we hope to demonstrate the necessity of pursuing developments along these lines by showing how values are built into the foundations of modern economic theory.

2. Logical positivism and the elimination of values

The emergence of scientific knowledge in conflict with, and as a rival to, religious knowledge, led to a study of the 'demarcation problem' – how to differentiate (and prove the superiority of) scientific knowledge from other types of knowledge. This program reached a highly successful culmination with the emergence of the philosophy of logical positivism in the early twentieth century. Here 'successful' means that the philosophy was overwhelmingly accepted by scholars for a large part of the twentieth century, not that it was correct. Indeed, subsequent investigations revealed so many difficulties that even its main proponents were forced admit that it was nearly "all wrong".² For example, a modern empiricist Van Fraassen (1980, p. 2) writes: "Logical positivism... even if one is quite charitable... had a rather spectacular crash". Suppe (1977) provides the epitaph, a detailed and comprehensive discussion of reasons why empiricism was eventually abandoned by philosophers.

According to the positivist philosophy, scientific statements were based on observations and logical deductions from them. Statements that could not be verified or disconfirmed by observations were meaningless. In particular, values, ethics and moral judgments were not scientific, and in effect meaningless, except as an expression of an emotional attachment. This effectively relegated a huge portion of existing knowledge, which included religious knowledge, to the dustbin. Julie Reuben (1996) writes that:

In the late nineteenth century, intellectuals assumed that truth had spiritual, moral and cognitive dimensions. By 1930, however, intellectuals had abandoned this broad conception of truth. They embraced, instead, a view of knowledge that drew a sharp distinction between 'facts' and 'values'. They associated cognitive truth with empirically verified knowledge and maintained that by this standard, moral values could not be validated as 'true'. In the nomenclature of the twentieth century, only 'science' constituted true knowledge. Moral or spiritual values could be 'true' in an emotional or nonliteral sense, but not in terms of cognitively verifiable knowledge. The term 'truth' no longer comfortably encompassed factual knowledge and moral values.

² Ayer, a leading positivist in his youth, later remarked about Language, Truth, and Logic that it was "all wrong" – http://www.newworldencyclopedia.org/entry/A.J._Ayer (accessed 25 September 2009).

In this section, we briefly discuss three powerful and widely believed positivist arguments for keeping values out of scientific discourse. Variants of all three are contained in the following quote from Ayer (1936):

We can now see why it is impossible to find a criterion for determining the validity of ethical judgements. It is not because they have an 'absolute' validity which is mysteriously independent of ordinary sense-experience, but because they have no objective validity whatsoever . . . They are pure expressions of feeling and as such do not come under the category of truth and falsehood. They are unverifiable for the same reason as a cry of pain or a word of command is unverifiable [as a statement] – because they do not express genuine propositions.

2.1 Positivist objections to values

Hausman and MacPherson (2006, Introduction) provide a more detailed discussion of all three of these objections and answers to them.

1. Values are not scientifically meaningful because they do not correspond to any observable phenomena ("independent of sense experience", Ayer).

The positivist idea that facts must be verifiable by confrontation with direct experience ran into trouble with gravitational fields, charges on electrons, and many other theoretical entities that could not be parsed out of existence as being convenient shorthand descriptions of sensory data. Mathematical concepts are meaningful even though they do not correspond to any observable entities, and are not *analytic* in the sense that the positivists sought to show. Putnam (2002) provides a sophisticated philosophical discussion, while Hausman and McPherson (2006) provide an intuitive approach. The upshot is that concepts like charges, cruelty, alienation and exploitation can be meaningful without having any direct connection with observable entities. Indeed, the charge of ambiguity and meaninglessness applied to ethical values can be reversed; Putnam and Walsh (2010, draft) cite an observation of White that the concept of 'stealing' seems crystal clear, when compared with the central positivist idea of 'observability', which has been critiqued and re-defined many times and continues to be controversial.

2. A moral judgment is an imperative – a demand for action, or an expression of 'ought' – which cannot be assessed for truth or falsity ("do not come under the category of truth or falsehood", Ayer).

The positivist conception of knowledge as statements to which the binary attribute of true/false is applicable is too narrow. Consider for example, alternative strategies for treating cancer, which have different implications on longevity and quality of life during and after treatment. Like choices among lifestyles, comparative statements like "strategy A is preferable to strategy B" may not have truth values, but nonetheless fall within the scope of scientific investigation. Subjective evaluation of relative tolerance of different potential side effects must be combined with gathering data on past comparable cases, and making inferences to potential probabilities of different outcomes. A more striking example arises from the Gödel undecidability of the continuum hypothesis (CH); see Cohen (1967) for a lucid presentation. Both CH and its negation are consistent with the Zermelo-Fraenkel axioms for

set theory, and therefore neither true nor false. Both Cohen and Gödel came to the view that choice among the two must be based on intuitive grounds.

The naïve view that empirical and objective issues can be isolated, and studied in separation from the value based and subjective issues can be challenged on many grounds. Some aspects of the complex interdependence between preference, beliefs, welfare, and normative policy choices are explored in Hausman and McPherson (1994, and also 2006 Section 8.3.1.).

3. Value judgments are subjective, arbitrary and cannot be discussed rationally. There is no way to resolve disagreements (“unverifiable... as a cry of pain”, Ayer).

To refute these positivist views, widely echoed in popular economics textbooks, it is enough to cite Sen (1987), Putnam (2002), as well as Hausman and McPherson (2006) both as counterexamples (rational discussions of value judgments) and refutations (they show how to discuss value judgments rationally). This positivist idea is predicated on the possibility of sharp separation of facts and values. Mongin (2006) and Putnam (2002) give several examples of statements that generate substantial controversy regarding whether they should be classified as facts or values. At the same time, it is easy to give examples of value judgments, which command substantially greater consensus.

2.2 Current philosophy of science

As we live and learn, we acquire a large amount of knowledge about the world we live in. The positivists conferred a special status on scientific knowledge, acquired by observation of indisputable facts and built upon by solid logical inference. Intuitively, I feel just as certain about my knowledge that it is wrong to wantonly murder innocents as I do about my knowledge that the walls around me are painted yellow. Positivists sought to show that the first kind of knowledge (of values) was an illusion and ‘meaningless’.

After describing the “spectacular crash of logical positivism,” and the “shifting sands of philosophical fortune”, Van Fraassen (1980, p. 2) devotes his book to the study of “what problems are faced by the *aspiring* empiricist today?” (italics in the original). The conclusions are surprisingly weak and tentative, and a far cry from the confident and sharp assertions of the early positivists. Philosophers of science have not abandoned the idea of establishing the superiority of scientific knowledge. The editors of the Handbook of the Philosophy of the Social Sciences set out to establish the distinguishing characteristics of scientific knowledge. In a review of this Handbook, Agassi (2009) writes that “it reflects fairly well the gloomy state of affairs in this subfield”, and describes the large number of unresolved controversies in the field.

The Pragmatic Tradition in philosophy was eclipsed by positivism through most of the twentieth century, but is now enjoying a revival. One of the key claims of this tradition is that all of our knowledge (scientific, religious, moral, social, etc.) is similar. Thus, as Agassi (2009) writes, “there is neither need nor possibility to justify science and forbid dissent from it”. Acceptance of this point of view would lead to a dramatic shift in the current methodology of economics – our knowledge of ‘science’ and ‘values’ are based on the same epistemological principles, and hence the exclusion of values from scientific discourse is arbitrary and unjustified. Some object to the idea of the epistemological parity of scientific and ethical theories because they do not see how to explain the possibility of ethical knowledge. Putnam

(2002, p. 45) raises this objection as the reason the fact/value dichotomy is tempting, and gives a surprising answer:

The very idea of explaining in absolute terms how ethical knowledge is possible... seems to me ridiculous. ...it seems impossible to explain how *thought*, *belief*, and *reference* is possible. ...Indeed, the long history of failures to explain in metaphysical terms how mathematics is possible, how nondemonstrative knowledge is possible (the so-called 'problem of induction'), and so on, suggests that nothing much follows from the failure of philosophy to come up with an explanation of *anything* in 'absolute terms'.

The attempt to keep economics 'scientific' and 'value free' has meant that values have been buried out of sight in the framework chosen and in the methodology. We will try to dig these values out from underneath the foundations of scarcity.

3. The three pillars of scarcity

In this section, our goal is to establish that mainstream economic theory is committed to three norms that serve to make scarcity the central economic problem. We also sketch a history of how these norms were adopted in economic methodology. The first of these three is a commitment to private property; the political nature of this commitment is clear from the existence of societies with radically different notions of property. The second is a methodological decision not to investigate the formation of tastes. This demarcates a discipline boundary, and is a methodological norm. We are defining what an economist should and should not study, and textbooks argue that this is the proper role of an economist. The third pillar is the equation of welfare with preference satisfaction. This means that economists should try to satisfy preferences of all members of the society. Before proceeding, it is important to clarify that we use norms in a much broader sense than just 'ethics' or 'morality'. Also, the significance of examining the history of thought requires some justification, presented below.

Why study history of thought? The positivist view of science as a collection of universal truths, arrived at by logical deductions from indisputable facts, allows no role for history. Closer examination reveals that the 'under-determination' of theories by observations is ubiquitous; see [Rashid](#) (2009) for an illuminating discussion. When a variety of theories fit all available observations, choice among them must be made on other grounds. Kuhn (1970, p. 4) writes that "an apparently arbitrary element, compounded of personal and historical accident, is always a formative ingredient of the beliefs espoused by a given scientific community at a given time". It is in light of this non-positivist understanding that it is useful to examine the history of thought. It highlights the historical contingency of apparently universal truths.

The definition of social norms: In order to function, every society must reach agreement on many issues, including ethical, social, political and legal structures. The set of implicit and explicit agreements as to how the society will be governed, how disputes will be settled, which types of education will be recognized as entitlements to jobs, which side of the road to drive on, behaviors which will be approved and those which will be subject to social or legal sanctions, etc. can all be termed part of the 'social contract'. Universally agreed upon elements of the social contract form part of the foundational framework in which discussions are carried out, and often remain unexamined. Putnam (2002) has emphasized that social

norms (all elements of the social contract) include judgments about relative aesthetic values of different scientific theories, agreements about methodological principles, and are not restricted to ethics and morality, the traditional areas covered by the Ten Commandments.

3.1 Locke's theories of property

The institution of private property is taken for granted, and alternatives do not receive serious discussion in most economics textbooks. Neoclassical models describe an abstract economy where all agents possess certain endowments. Common ownership and shared resources create 'externalities' and are ruled out *ab initio* in simpler models. How agents came into possession of their endowments, and whether the society can or should pool resources to solve economic problems does not receive any discussion. We sketch some key historical developments that led to the emergence of current widespread social norms regarding private property. More recently, the extension of these concepts beyond the paradigmatic 'land' has led to renewed interest among economists. See Dragun (1987) for a survey.

Philosopher John Locke was among the leading architects of modern thought. Locke's theories of property are his most important contribution to political thought. Variants of these theories continue to provide the philosophical basis for capitalist economies to this day. One of the key ideas is that private property exists as a natural right of human beings *prior* to the formation of governments. Furthermore, legitimate governments are created by mutual consent of citizens so as to protect the natural rights of the citizens. For example, Locke (1690) writes that: "The reason why men enter into society is the preservation of their property".

One of the main goals of secular political thought is to allow people with different religions to coexist peacefully under a common rule of law. An essential ingredient in achieving this goal is the idea of individual freedom. To make room for diverse religious rules, we allow for maximum possible freedom compatible with a social order. Thus the social contract in general is not subject to a priori constraints. Any set of rules that all people agree to will serve. So this move of providing privilege to property so that it is not subject to the social contract is a bit odd. When we negotiate among ourselves to create common rules to live by, we may not discuss the idea of private property. Locke (1690) writes that those entering into a social contract "*cannot intend to give any one or more an absolute arbitrary power over their persons and estates, and put a force into the magistrate's hand to execute his unlimited will arbitrarily upon them*". Locke requires both "persons *and* estates" to be protected from the arbitrary power of any magistrate, inclusive of the "power and will of a legislator". Depredations against an estate are just as plausible a justification for resistance and revolution as are those against persons.

Why did Locke's theory of property emerge as the dominant one in England, eventually removing all alternatives from view? History provides important clues. Battles among monarchs were common, and taking property from the losers and awarding them to supporters was extremely common. Cromwell's rebellion was a watershed event in British history. Even though monarchy was eventually restored, the power of the landed aristocracy against the monarchs was firmly established and continued to increase after this time. Secure property rights for landowners, not subject to the arbitrary will of monarchs, supported this power configuration and therefore emerged as the dominant theory. Tawney (1926, Chapter 3) provides details of how political and religious upheavals in the post-Cromwell world made possible the social revolution created by the movement of 'enclosures,' or the privatization of

public property. [Kogl](#) (2005) summarizes how ‘enclosures’ of common lands in the post-Cromwell period led to the emergence of modern notions of private property. This political commitment to private property is an essential ingredient in the emergence of scarcity as a central economic problem of a society.

3.2 *De gustibus non est disputandum*

It is a methodological decision on part of economists not to analyze tastes. For example, Samuelson and Nordhaus (1989, p. 26) state that economists “must reckon with consumer wants and needs whether they are genuine or contrived”. Note the imperative form, which nonetheless appears meaningful, and subject to rational argument. Similarly, Stigler and Becker (1977) make the normative claim: “Tastes are the unchallengeable axioms of a man's behavior”. An economist is not allowed to question how tastes and wants are determined. Stigler and Becker (1977) also write that “On the traditional view an explanation of economic phenomena that reaches a difference in tastes between people or times is the terminus of the argument: the problem is abandoned *at this point* to whoever studies and explains tastes (psychologists? anthropologists? phrenologists? sociobiologists?)”. This delineates a sharp discipline boundary, and a subliminal suggestion that it is not altogether respectable to study tastes.

Modern textbooks reflect this methodological commitment by taking utility functions as given. The origins, causes, flexibility, variations and intensities of these preferences are not the subject of economic analysis. Cooter and Rapaport (1984) provide a history of the transition from cardinal to ordinal utility, and argue that contrary to what is widely believed, this did not represent scientific progress. Similarly, Wong (2009) argues that Samuelson's attempt to replace ordinal utility by ‘revealed preference’ fails to achieve its methodological goals. It is this last transition, discussed in greater detail below, which led to the idea that we cannot question tastes. Attempts to study how tastes are formed, how they change, and how they relate to satisfaction, welfare, happiness, etc. require going beyond observable choices, and hence are not ‘scientific’ according to positivist views.

3.2.1 Positivism leads to revealed preference

The positivist program of focusing on observables alone was extremely influential in the development of all sciences in the twentieth century. For instance, behavioral psychologists sought to study observable behaviors instead of unobservable emotional states. Similarly, economists sought to replace cardinal utility based on unobservable states of satisfaction and pleasure with more scientific and observable counterparts. This is why the Hicks-Allen reformulation of utility theory, which showed how all relevant economic concepts could be formulated using ordinal utility was hailed as a ‘revolution’.

Because ordinal utility is still based on the unobservable preferences of the consumer, the attempt was made to replace it with observable choices. Samuelson (cited in Wong, 2009) writes of “The discrediting of utility as a psychological concept” as the reason for his development of ‘revealed preference’ theory. Wong (2009) provides an illuminating discussion of the methodological developments which led to ordinal utility and onwards to revealed preference. He has also shown how this research program fails in its methodological objectives. Because of the close correspondence between choices and preferences, assumptions about choices amount to assumptions about preferences. The mathematical

equivalence of ordinal utility theory with revealed preference theory was demonstrated by Houthakker (1950).

3.2.2 Errors of positivism are reflected in revealed preference

Since choices reflect preferences, we cannot avoid reasoning about unobservables by focusing on choices alone. Any observable patterns in choices can only be due to patterns in the underlying preferences; if preferences do not exist (or are complex, conflicting and incomplete) then choices would not be subject to any logic at all. This issue is still not clearly understood by many. For example, Binmore (2009) writes: "We accept that people are infinitely various, but we succeed in accommodating their infinite variety within a single theory by denying ourselves the luxury of speculating about what is going on inside their heads. Instead, we pay attention only to what we see them doing". Binmore, like Samuelson before him, fails to recognize that assumptions about (or descriptions of) choices are necessarily assumptions about preferences, or motivations for these choices. If observable choices follow simple rules, then motivations of people are *not* infinitely varied in the context under discussion. We focus on choices because of our strong intuition that the underlying preferences are stable enough to build a theory upon. Modern utility theory places strong, testable, and falsifiable restrictions on choice behavior, and by implication, equally strong restrictions on possible motivations for these choices. Therefore, Binmore's assertion that "modern theory of utility makes a virtue of assuming *nothing whatever* about what causes our behavior" is not correct. In fact, extrapolations, predictions and explanations of patterns in choice behavior are *only* possible if we postulate underlying preferences which give rise to these patterns. Wong (2009) provides a more detailed and complete discussion.

3.3 Welfare is preference satisfaction.

Lerner (1971) writes that "as an economist I must be concerned with the mechanisms for getting people what they want, no matter how these wants were acquired". Similarly, Samuelson and Nordhaus (1989, p. 2) write that economists "must reckon with consumer wants and needs whether they are genuine or contrived. Shakespeare's King Lear said, "Reason not the need" – and economists do not; rather they analyze how limited goods get rationed among whatever wants a society generates." After establishing that classical economists did not share these views, Hausman and MacPherson (2006) describe the transition to these modern views as follows:

In modern economic theory as developed in the 1930s, economists put aside substantive conceptions of well-being, such as wealth or happiness. Because they found that the basic propositions of demand theory and consumer behavior could be accounted for simply by supposing that people had stable preference rankings with certain properties, most economists took well-being to be the satisfaction of preferences.

If we follow positivist dicta, it is almost inevitable that we will equate welfare with preference with choice, since only choices are directly observable. Also, avoiding discussion of the deep and complex notion of human welfare creates the impression that we take no stand on this issue. In fact, discussions of market failures, optimal taxation, advantages of free trade, etc. are all predicated on implicit views about human welfare. Hausman and Macpherson (2006, Chapter 8) make these views explicit and provide a clear and detailed discussion of how

these are not tenable. Below, we briefly examine some objections to the 'standard view' of human welfare implicitly espoused in modern economic theory.

1. It is immediately obvious from introspection that welfare, preference and choice are three different things. Spinach is good for me (welfare), but I may prefer ice cream. I may override my preferences and choose spinach to please my mother. Because mental states are not observable, Ayer initially denied their existence. He later recanted, saying that denying the existence of my own internal mental states is tantamount to 'feigning anesthesia'; logical consistency demands accepting the same for others.
2. Cooter and Rapaport (1984) write that classical authors regarded utility from consumption as being based on observables like health and productive capacity rather than internal mental states. Thus objective and quantifiable measures of welfare are available. Construction of indices of well-being based on ideas of Sen, Mahbubul-Haq, Nussbaum, and others is an active area of research.
3. In practice, governmental bodies routinely arrive at consensus on 'basic needs', which can be considered as the most urgent preferences. Such consensus is required to design welfare programs in operation in most countries. Thus as a purely empirical matter, people can argue, resolve disputes and arrive at consensus regarding welfare.
4. For assessing welfare, it is crucial to distinguish between needs and wants. Restricting attention to choices make it impossible to make this distinction. Raiklin and Uyar (1996) argue that eliminating the needs/wants distinction "has meant also that the moral and social implications of such comparisons and discussions could be kept out of economic theory and analysis".

4. Alternatives to scarcity

We have discussed how modern economic theory is based on a political commitment to private property, a methodological prohibition on exploring taste formation, and a preference satisfaction view of human welfare. We now show how considering alternative commitments has the potential to replace scarcity as the fundamental principle of economic theory. This will also show some of the new vistas for research opened up by explicit consideration of values.

4.1 Alternatives to private property

The Cherokee Constitution of 1839 states: "The lands of the Cherokee Nation shall remain common property". In a society where land is common property, and provides amply for basic necessities of food and shelter, scarcity would not emerge as the fundamental economic problem. 'Economists' in such a society would probably spend time on studying rules for sharing, and methods for resolving the commons problem, and settling intra and inter-tribal disputes regarding usage of common property. This is made more plausible by looking at the case of England, below.

In England, Polanyi (1944, p.37) has colorfully described the social revolution that occurred as a result of the conversion of commons to private property:

Enclosures have appropriately been called a revolution of the rich that is against the poor. The lords and nobles were upsetting the social order,

breaking down ancient law and custom, sometimes by means of violence, often by pressure and intimidation. They were literally robbing the poor of their share in the common, tearing down the houses which, by the hitherto unbreakable force of custom, the poor had long regarded as theirs and their heirs'. The fabric of society was being disrupted; desolate villages and the ruins of human dwellings testified to the fierceness with which the revolution raged, endangering the defenses of the country, wasting its towns, decimating its population, turning its overburdened soil into dust, harassing its people and turning them from decent husbandmen into a mob of beggars and thieves

Traditional ideas of how to handle sharing of common property were forgotten. Kogl (2005) writes that:

Commons rights enabled persons to meet many everyday needs: not only by pasturing livestock and raising crops in the open fields, but cutting turfs (peat for fuel) and wood (for building and fuel), hunting game, and foraging for wild foods and building materials as well. All these rights were precisely named (e.g. right of turbary, right of botes) and lands were precisely delineated as pasture (mead or meadow), agriculture lands (the open fields), or "wastes" and woods. The precision with which the commons systems defined lands under different types of ownership is reflected in a rich vocabulary – of carrs, gores, selions and so on – that we have largely lost today. The English common property regime was far from a vague, first-come first-served system in which everybody and nobody owned the land.

This shows that institutional and social structures evolve to handle common property rights. Polanyi (1944) has argued at length that market societies are exceptional, and that production and distribution are handled via a variety of different social institutions in non-market societies. Economic problems are formulated and solved quite differently in such societies.

As a third example, consider an idealized communist society, based on public ownership of means of production and an ethical commitment to providing to 'each according to his needs'. In such a society, the central economic problem might well be providing suitable incentives to workers to ensure high productivity. Substantial recent economic literature shows that non-monetary incentives can be more effective than monetary incentives in improving labor productivity; see, for example, Ariely (2008, Chapter 4). This literature, which studies the impact of social mechanisms like gift exchange on efforts put in by laborers, may be a central concern in such economies.

Some would argue, like Fukuyama (1992), that all alternatives have proven non-viable, and history has converged to the optimal economic and political structures of capitalism. However there are several empirical and normative claims within such a statement, which have been discussed at length in associated literatures. In this paper, our purpose is not to discuss the relative merits of alternative arrangements, but merely to show that it is a normative decision for a society as a whole to choose among alternative ways of structuring property rights. Such structures may determine whether we live in wealthy societies with aggressive competitors, high luxury and inequality, or relatively poorer but more egalitarian societies with norms of cooperation and community. The idea that everyone would prefer to live in a wealthier society (since it would be, at least potentially, a Pareto improvement), is itself clearly normative. It is

harmful to bury the normative choices involved and present private property as a fact of nature, a part of a scientific and 'positive' theory.

4.2 Studying the formation of tastes

Putting the study of tastes outside discipline boundaries is not a viable option for economists, despite what Samuelson and Stigler say. We show how different possibilities lead to drastically different recommendations for economic policies.

1. Once basic needs are met, preferences and satisfaction is determined by comparisons with others. If average consumption in the society rises, I must acquire more to maintain the same level of satisfaction. This theory of taste formation has a radical implications for welfare and efficiency of economic policies. This externality in the utility function leads to a rat race. Everyone works hard to get ahead of others, but there is no net gain to society in terms of satisfaction and welfare (except for reductions in poverty). In such a society, encouragement to relax, enjoy life, not be competitive would be effective in increasing welfare. GNP per capita would be a very poor measure of progress; a headcount of the poor would be a more accurate indicator. Scarcity cannot be eliminated by increased production but by reductions in conspicuous consumption and envy, and teaching contentment. Given these radical implications, surely economists cannot afford to be agnostics on this issue.
2. Galbraith has argued that industrial societies over-produce and use advertisements to create artificial demand for the excess supply of products. If this is true, then refusal to analyze tastes serves corporate needs rather than society as a whole. On this view, over-production rather than scarcity is the central problem of industrial societies.
3. It is plausible to suppose that preferences depend on how children are brought up, and that this is subject to social consensus. If our movies lionize Buddha and Mahatma Gandhi, our children will learn to be ascetics. If we portray warriors as heroes, our children will learn to enjoy war. If we teach cooperation, self-sacrifice, generosity and community to our children, they will learn these values. There is substantial empirical evidence to support the idea that social consensus will determine what we consider to be the entitlement of the poor. As Sen (1983) has shown, it is this, rather than scarcity which creates famines.

Again, it is not our goal to argue for any particular theory of taste formation, but just to note that the issue is crucial to topics of fundamental importance in economics. Different theories lead to different roles for scarcity. As such, we cannot afford to place this issue outside the discipline boundaries of economics.

4.3 Direct measures of welfare

As we have argued earlier, modern economic theory implicitly assumes that human welfare roughly corresponds with preference satisfaction. Hausman and Macpherson (2006) have explained in detail why this is highly implausible, and suggested several alternatives. Below we discuss some alternative views on welfare that have the effect of displacing scarcity as the fundamental economic problem.

1. Suppose a society (like the Amish) considers simple lifestyles more conducive to welfare than consumerism. Scarcity or excess of material goods is not of concern except as a means to sustain life. Economists in such a society might formulate the following alternative to the Pareto principle:

Pareto-style longevity principle: A re-allocation of resources improves social welfare if life expectancy of some member is increased, while no one's life expectancy is adversely affected by the change.

This is an objective, apparently value free, criteria with radically different implications for economic policies compared to the standard Pareto criterion. It would re-define the role of scarcity in the economic system.

2. Basic Needs, the capabilities approach of Sen and Nussbaum, and the Human Development approach of Mahbubul Haq, are the intellectual heirs of the material welfare approach of classical economists. Adopting this idea of welfare, as opposed to preference satisfaction, would give 'scarcity' a different meaning. Conventional views hold scarcity to be a result of unlimited wants in pursuit of limited goods. In material aspects, these new approaches to welfare would focus on health, food and water, education, shelter etc. Scarcity would refer to inadequate food supplies, insufficient numbers of doctors, schools, homes, etc. Many studies suggest that material resources are sufficient to meet basic needs for everyone. The fundamental economic problem would then be one of distribution rather than scarcity.
3. Communitarians offer the polar opposite of the individualistic view of welfare espoused by economists. To see how placing community welfare above individual concerns affects scarcity, consider the case of precautionary savings. Suppose every individual has a small risk of a catastrophic event. Suppose also that due to adverse selection, moral hazard, unquantifiable probabilities, or ambiguities in specifying the event, insurance markets fail to exist. In an individualistic society, everyone must save for his potential rainy day, leading to a potentially huge demand for resources. If one can count on community support in case of disaster, far fewer resources would be required, averting scarcity.

In this section, we have demonstrated that replacing any one of the three pillars leads to substantial changes in the role of scarcity within an economic system. This shows how these normative commitments lead to the emergence of scarcity as the fundamental economic problem.

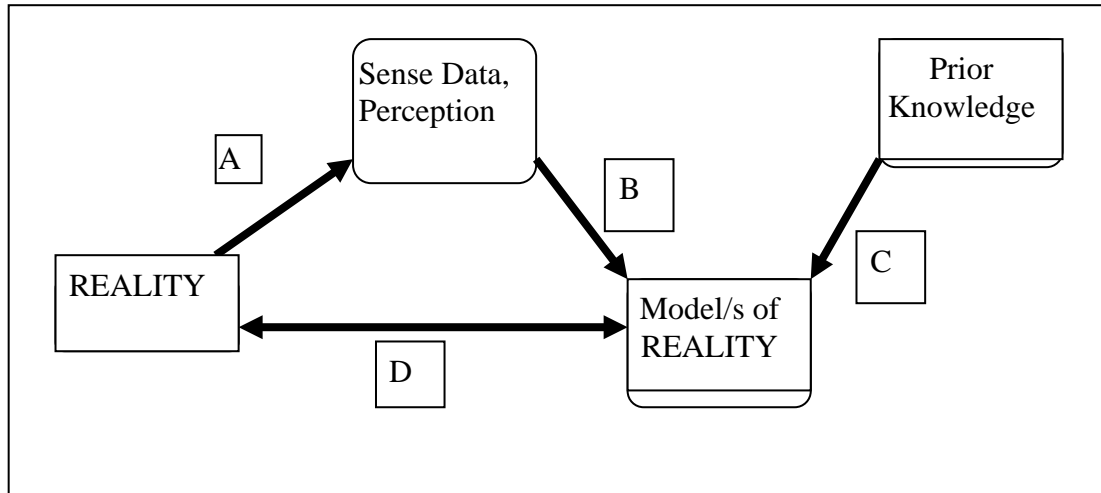
5. Entanglement of facts and values

We have argued that values are implicit in the idea that scarcity is the fundamental defining concept of economics. The idea that facts and values cannot be separated flies in the face of received wisdom in economics. In this section, we present two more general arguments as to why facts and values are inextricably entangled in all scientific theory.

5.1 The unobservability of values

Kant's philosophy prepared the ground for a non-realist understanding of the world, which became the basis of logical positivism. The complex story has been detailed by Manicas (1987), who has also explained how this led to a misunderstanding of the nature of science and scientific methodology. These errors led to the subsequent collapse of logical positivism. Following Gardner (1999), we first summarize aspects of the Kantian philosophy relevant to the fact/value distinction.

Figure 1: Model/s of Reality versus Reality



Reality generates signals that impact on our physiological equipment for detecting our environment as sensory data (A). This sense data is interpreted (by our mind) to create a model of reality (B). The process of interpretation also involves some prior knowledge represented in (C). According to Kant, a central concern of traditional metaphysics was the correspondence between our models of reality and reality itself, labeled D in the diagram. The question “Do electrons, charges, gravitational fields, energy exist?” reflects this concern – do these terms in our models of physics correspond to objects in reality out there? Two key insights of Kant which he termed a “Copernican Revolution” in philosophy are:

1. Negative. It is impossible to assess whether our representation of reality is a faithful and accurate representation of reality. This is because we have no independent access to reality, other than by our models of reality. We can and do construct, compare and evaluate different models of reality along many different dimensions. However, we cannot judge these models on the crucial dimension of which is a more accurate representation of reality, because models are all we have.
2. Positive. One can make progress in epistemology by focusing on (B) and (C), the process by which we transform the chaotic jumble of sense data about the real world into a coherent model of reality.

In accordance with this Kantian insight, “Do electrons exist?” is the wrong question – we can never know whether our models of reality accurately represent what is out there. A more modest question is: “Do electrons help in the process of sorting our sense data into a coherent model of reality?” Here the answer is clearly “yes, currently they do”. But a later theory may come along which dispenses with electrons and creates a more ‘interesting, informative, appealing, or elegant’ picture of reality.

At which point, electrons will blink out of existence, like ether. This pragmatic approach to ontology became the accepted resolution of debates about the existence of unicorns after Russell parsed them out of existence.

Following up on the ground prepared by Kant, logical positivists argued that scientific knowledge is about the relations between mental structures and sense data. Our mind organizes the sense data into patterns, and these patterns are the scientific laws. Every meaningful sentence can be translated into an equivalent statement regarding some collection of observations that confirm this statement. After making this definition of meaning, the positivists observed that there are no observations that can affirm or negate value judgments. Thus, according to positivist criteria of meaning, there are no meaningful value judgments or normative statements. These are merely expressions of emotion, which are human, but not scientific.

As discussed in the introduction, logical positivism suffered a spectacular crash in the mid twentieth century. A definitive epitaph is available in Suppes (1977). We briefly discuss the issues most directly relevant to this positivist objection to values.

Firstly, the question of what is 'observable' is very difficult to make precise. Putnam (2002) has given a detailed discussion of the problems faced by positivists in defining observability. If nearly every human being feels disgusted when he or she observes atrocities, this appears to be an observable and objective evidence for the existence of values. However, on certain definitions of observability initially favored by positivists, this does not qualify as an observable.

A second problem raised by Putnam (2002) is that the selection of scientific theories often involves aesthetic judgments about simplicity, elegance and power. These are values, though often not recognized as such. Copernican theory was favored over the Ptolemaic system, even though it was less empirically accurate, primarily because it was substantially simpler and more elegant. Similarly, the currently popular string theory in physics is being explored because of its elegance, even though there is not a shred of empirical evidence in its favor. Thus values are involved in the selection of scientific theories.

A third problem is that each scientific theory organizes a collection of observations in an apparently objective fashion. However the collection of facts selected depends on values. These values are hidden, because the process of selection is not subjected to examination. For example, each economic policy has myriad implications regarding social, political, and economic structures. Following free trade policies and allowing an industry to collapse may increase wealth while destroying a community of workers. Focusing on one aspect and ignoring the other reflects hidden values, as has been pointed out by several authors – for instance, Nelson (2001).

All of these arguments show that facts and values cannot be separated in the expression of scientific theories, as is assumed in making the normative/positive distinction, and widely believed by economists.

5.2 The Duhem-Quine thesis

Exploration of positivist theories of knowledge led to the understanding that our theories about the world must be evaluated as a whole. It is not possible to separate an individual sentence

X of a given theory and ask whether it is true or false, analytic or synthetic etc. The interpretation of the sentence is only possible within the context of the theory as a whole. As a result, any analysis of the sentence is always conditional on the assumption of the validity of the background theory to which it belongs. This makes it impossible to distinguish sentences with empirical contents from those without. Several examples exist in the literature of definitions that are motivated by empirical regularities. On the surface, the definition is an analytic truth. Deeper examination shows that it has empirical content, since the definition was made to crystallize an empirical regularity, and summarize a pattern of observations. This is one reason why the dogma of the analytic/synthetic distinction does not survive a close examination.

It is widely agreed that epistemic and esthetic values are inevitably involved in the process of selection of scientific theories. The idea that scientific theories must be judged as a whole means that these values are reflected to some extent even in apparently purely observational sentences of the theory. To avoid this objection, Carnap tried to systematize the process of theory selection so as to avoid this problem, but could not succeed. A concrete example in the context of economic theory may be helpful in clarifying this issue.

The Pareto principle is widely accepted and regarded as a scientific and ethically neutral way of making welfare comparisons by economists. On the other hand, going further to recommend redistributions requires 'unscientific' value judgments. This is a faithful representation of Locke's theories of property: the initial property endowments must not be called into question, even if they leave some segments of the society starving, while others have far beyond their need. This leads to the paradoxical position that it is scientific and objective to support property rights over the basic needs of the poor, while it is unscientific and value-laden to advocate basic needs over property rights. The problem arises because the Pareto principle, which appears perfectly objective, reflects background commitments made elsewhere in the theory. As we have already seen, changing these commitments leads to equally objective alternatives, such as the Pareto-Style Longevity principle.

6. Conclusions

Carnap (cited in Putnam, 2002, p. 18) writes that "All statements belonging to... Ethics... are unverifiable... and unscientific. ...we describe such statements as nonsense". The positivist attitude of respect for science, and open contempt for the 'unscientific' was absorbed by the vast majority of the community of scholars in the twentieth century. Strangely enough, the philosophers subsequent rejection of positivism has not been equally influential. Positivism is sufficiently deep that efforts to prove its central propositions engaged some of the best minds of the twentieth century. Its rejection required even deeper considerations, the full implications of which have not yet been absorbed.

For economists brought up on positivism – and this is the majority, according to Hands (2009, quoted in introduction) – the idea that values underlie economic theories is threatening. It is an accusation that economists are irrational, ideological and emotional.

In a post positivist world, to say that values are entangled with facts is a description, not an insult. This is the case for all scientific theories, not just economics. Instead of burying values into the framework of our theories and in the selection of relevant facts, methodological progress requires an open expression and discussion of these values. Weston (1994)

enumerates four reasons why economics cannot be value free, and argues that, as a first step, we bring these ethical issues into the open air. Once this is done, it will be necessary for economists to learn ethical philosophy of a specialized sort.

Economist now generally agree that positivists were wrong about values; these exist, and can be meaningfully and rationally discussed, and even that this is useful and important. However, they feel that by focusing on observables alone, they can avoid wading into these murky waters. Forceful articulations of this argument and responses to it are available in Caplin and Schotter (2008). As we have argued at length in the present article, facts and values are inextricably entangled and we cannot discuss one without implicitly involving the other.

A second common argument is that mathematical optimization problems are crisp and clear, while ethical arguments are deep and murky, and have been discussed for centuries without resolution. Furthermore, economists are not equipped with relevant skills to solve them. This argument is the analog of looking for the key under the lamppost instead of where it was dropped in the dark. Sen has said that “it is better to be vaguely right than precisely wrong.” Once the inevitability of dealing with ethical issues is recognized, economists will acquire the relevant training. This should be considered as a challenge and an opportunity to explore new realms of intellectual possibilities. As Weston (1994) has noted, precisely the same process occurred when mathematical skills were seen to be necessary by the profession: requisite mathematical skills became part of the standard syllabus in economics. Substantial progress has already been made, and there exists sufficient material and in-depth treatments of ethics and economics for several courses at both undergraduate and graduate levels. We need to organize this material into courses, and make such courses part of the standard curriculum in economics.

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Degrowth, expensive oil, and the new economics of energy

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Our understandings and expectations of the world have been shaped by our experience of economic growth. The dynamic stability of that growth has habituated us to what is 'normal.' That normal must soon shatter. [David Korowicz]

1. Preparing for life after growth

Building upon the 'limits to growth' perspective (Meadows et al, 2004), and drawing upon the work of various energy analysts (Ayers and Warr, 2009; Murphy and Hall, 2011a-b), this paper is based on the view that, in order to grow, industrial economies require a cheap and abundant supply of energy, especially oil. When the costs of oil increase significantly, this adds extra costs to transport, mechanised labour, plastics, and industrial food production, among many other things, and this pricing dynamic sucks discretionary expenditure and investment away from the rest of the economy, causing debt defaults, economic stagnation, recessions, or even longer-term depressions. That seems to be what we are seeing around the world today, with the risk of worse things to come (Tverberg, 2012a). Since crude oil production has been on an undulating plateau since 2005 while demand has increased (Hirsch et al, 2010), this has put huge upward pressure on the price of oil, and several commentators have drawn the conclusion that these high oil prices signify the end (Heinberg, 2011; Rubin, 2012) or at least the twilight (Alexander, 2011a; 2012a) of economic growth globally. If this is true, we are living at the dawn of a new age, and should be bracing for impact.

Some new research, reviewed below, has come to light that seems to confirm this essential message. Expensive oil, in other words, does appear to be suffocating the debt-ridden, global economy, just as it is trying to recover (Hamilton, 2011; Tverberg, 2012b). Unfortunately, mainstream economists, including those in government, seem oblivious to the close relationship between energy, debt, and economy, and this means they are unable to see that expensive oil is one of the primary underlying causes of today's economic problems. Consequently, they craft their intended solutions (e.g. stimulus packages, quantitative easing, low interest rates to encourage borrowing, etc) based on flawed, growth-based thinking, not recognising that the new economics of energy means that the growth model, which assumes cheap energy inputs, is now dangerously out-dated. When growth-based economies do not grow, household, firms, and nations struggle to repay their debts, and quickly things begin to unravel in undesirable ways.

Furthermore, even many of the most progressive 'ecological economists' fail to appreciate the important relationships between energy, debt, and economic growth. For several decades advocates of a 'steady state' economy (e.g. Daly, 1996) have been arguing persuasively that we need to move beyond the growth model, for various social and environmental reasons (Victor, 2008; Jackson, 2009). But very few seem to realise that interest-bearing loans are incompatible with a steady-state economy due to the fact that repaying debts plus interest implies growth (Sorrell, 2010; Trainer, 2011). Put simply, it implies growth because more

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money has to be paid back than was initially lent or invested, requiring an overall expansion of the economy if debts are to be repaid. Many ecological economists are against growth, without being against interest-bearing loans, and it is not clear that this is a coherent position. It is a tension that certainly deserves more critical consideration.

Similarly, ecological economists who argue for decarbonising the economy do not seem to realise quite how revolutionary this proposal is – which is not to say the proposal is misconceived (Hansen et al, 2008), only that its economic implications may be misunderstood. If the global economy managed to wean itself of fossil fuels over the next few decades in response to climate change, then a ‘steady state’ economy would be impossible, if a steady state is meant to imply maintaining anything like existing levels of affluence. It would be impossible because fossil fuels currently make up around 80% of global energy supply (IEA, 2010a: 6), and nothing like existing production could be maintained when we are talking about that level of energy reduction. Without fossil fuels, the world just would not have the energy supply to maintain a steady state of economic output; the economy would have to contract significantly. This is not a consequence many ecological economists seem to understand or dare to acknowledge.

While I accept that the world must transition to renewable energy sources without delay, evidence suggests that such sources will never be able to replace (fully or affordably) the energy contained in fossil fuels, especially oil (Trainer, 2012a; 2010a). Renewable sources are also fossil fuel dependent themselves, a point often and easily forgotten. Therefore, if we are serious about tackling climate change and getting off fossil fuels, we should be preparing ourselves for a world with perhaps half as much energy consumption, and this implies embracing, not a steady state economy, but some ‘degrowth’ process of planned economic contraction (Alexander, 2012b; 2011b). As the world’s population grows to nine or ten billion in coming decades, this reasoning is only going to get more challenging, because sustainable energy consumption on a per capita basis will decline even further. It is worth noting that even if there were no energy supply problems, the fact that the existing economy already greatly exceeds the sustainable carrying capacity of the planet (Global Footprint Network, 2012) means that significant overall economic contraction of some form would still be required (Alexander, 2012b; Clarke and Lawn, 2010; Latouche, 2009).

Needless to say, the powers that be are not willing even to entertain this ‘degrowth’ diagnosis or its radical implications, for it implies establishing fundamentally new economic systems that operate on much lower energy inputs. Empire, we can be sure, will not contemplate self-annihilation; it will struggle for existence all the way down. In much the same vein, consumerist cultures are very unlikely to accept any proposal to voluntarily reduce levels of consumption. Overcoming or dealing with these forms of resistance is the near impossible task that lies before those of us who seek a radically alternative, post-carbon economy (Trainer, 2010b; Heinberg and Leach, 2010; Alexander, 2011c).

1.1. A new economics of energy

If the world is to deal effectively with the ecological and economic problems it is facing, we urgently need to infuse a new economics of energy into our economic thinking and economic systems, both at the local and macro-economic levels. There is arguably scope for this transition to be a prosperous descent (Odum and Odum, 2001), but given how entrenched the growth model is, especially at the governmental level (Hamilton, 2003), a voluntary transition beyond growth economics will be neither easy nor likely. For those who do not expect

governments to take the lead in this transition, I believe the best path forward is to begin preparing for economic contraction at the personal and community levels, by minimising consumption through voluntary simplicity (Alexander, 2009; Alexander and Ussher, 2012; Trainer, 2010), getting out of debt, and building local resilience in the manner of Transition Initiatives (Hopkins, 2008; Holmgren, 2012). Most of all, we need to get used to living with a lot less energy. While ultimately the aim should be to build a fundamentally new, degrowth economy 'from below' and thus effectively replace existing economic structures by ignoring growth capitalism to death (Trainer, 2010; Alexander, 2012a; 2012c), it may be that 'resilience' – the ability to withstand forthcoming shocks – is the most we can reasonably hope for (Alexander, 2012d; Barry, 2012).

Life is too complex and has too many variables at play for anyone to know with much certainty the nature of forthcoming shocks, exactly when they are going to hit, or how hard, but a confronting body of evidence is indicating that we ought be at work preparing our local economies for life after growth (Heinberg, 2011; Hirsch et al, 2010). We cannot rely on governments to lead us on this transition, for they seem committed to doing everything they can to maintain and conserve the existing system, which is counter-productive since that system appears to have no future (Gilding, 2011; Meadows et al, 2004). It is almost certain that we are going to have to build the new economy ourselves, at the household and community levels.

Before these grassroots strategies and goals will be taken up en masse, more people need to understand the relationship between energy and economics. I hope this paper serves to draw more attention to these important issues, with the aim of opening up the debate for a wider discussion rather than attempting to end it. I'm afraid these issues are not going away. Mother Nature will make sure of that.

2. Energy and economics

Although the relationship between energy and economics can get very complex quite quickly, the basic dynamics can be easily grasped and conveyed. In this section I wish to outline the nature of those dynamics.

The first point to note is that there has always been a very close correlation between energy consumption and economic growth (Ayers and Warr, 2009; Stern and Kander, 2011), which should really come as no surprise. Quite simply, productive activity takes energy, and many studies and events have demonstrated that when energy supply has not met demand, economies suffer, often to the point of recession (e.g. Hamilton, 2010; Tverberg, 2012a). Furthermore, it has been shown that energy production growth drives economic growth, rather than the reverse. In a recent study, Ayres and Warr (2010: 1692) examined this issue and explain their results as follows:

[G]rowth does not drive increased exergy/useful work consumption, rather output growth is 'driven' by increased availability of energy and increased delivery of useful work to the economy. [These findings] provide clear evidence of the importance of the quantity of energy consumption for GDP growth and that efforts to reduce exergy consumption may have a negative effect on future GDP growth rates.

What is surprising, however, is that dominant macro-economic theories (e.g. Solow, 1956) do not include energy in their economic models, which means that if we use those models to think about the world, there is no reason to think that a stagnation or decline in energy supply need affect economic growth (for a critical review, see Hall and Klitgaard, 2012).

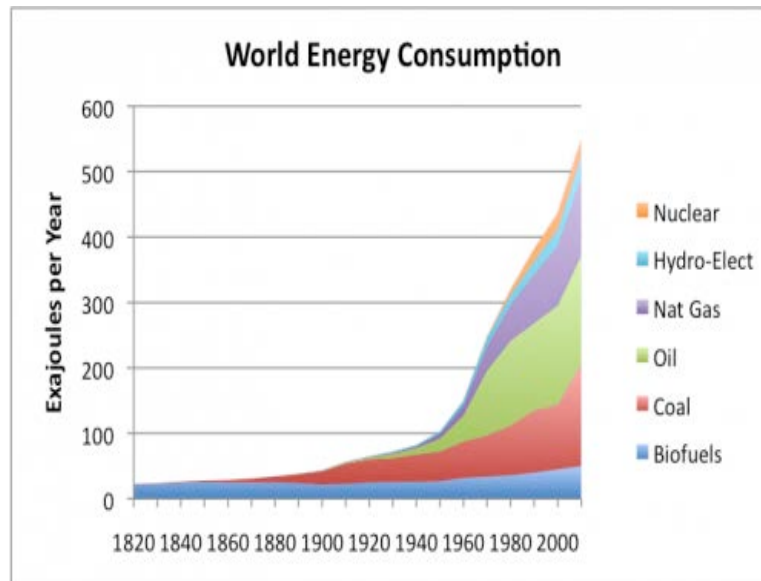


Figure 1: World Energy Consumption by Source, based on Vaclav Smil estimates from *Energy Transition: History, Requirement and Prospects* together with BP Statistical Data for 1965 and subsequent. The biofuel category also includes wind, solar, and other new renewables. Graph from Gail Tverberg (2012c), [‘World Energy Consumption Since 1820 in Charts.’](#)

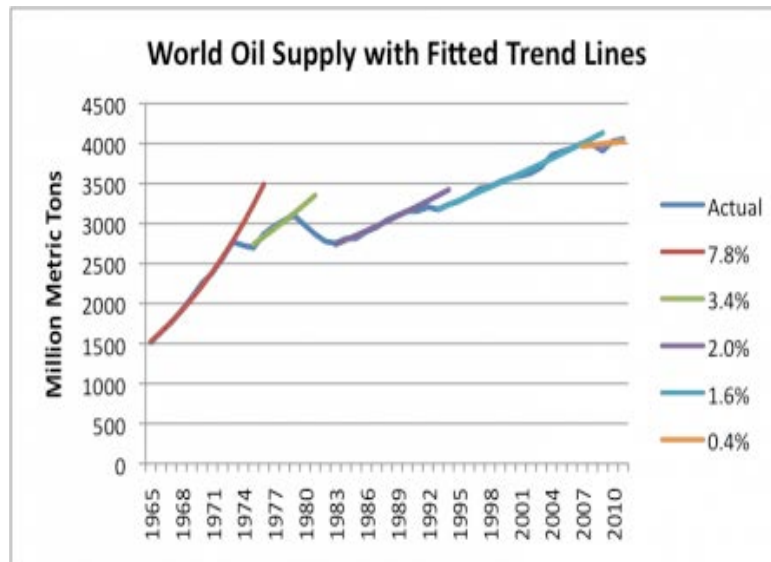


Figure 2. World oil supply with exponential trend lines fitted by Gail Tverberg. Oil Consumption data from BP 2012 Statistical Review of World Energy. Graph from Gail Tverberg (2012d), [‘Evidence that Oil Limits are Leading to Declining Economic Growth.’](#)

The reason mainstream economists have been able to get away with not taking energy into account in their macro-economic models is because, especially over the last few decades,

energy has been so cheap, and its supply so readily available, that ignoring its role in economic growth has not interfered significantly with the model's ability to make reasonably accurate macro-economic predictions (at least at times). But if we are facing a future of stagnating supplies of oil (see Figure 2 above) and thus high oil prices, then energy is going to play an ever-larger role in the costs of production and distribution, the implications of which are only now being rigorously fleshed out. Figure 3. suggests that the slowing of oil growth (shown in Figure 2) is retarding GDP growth.

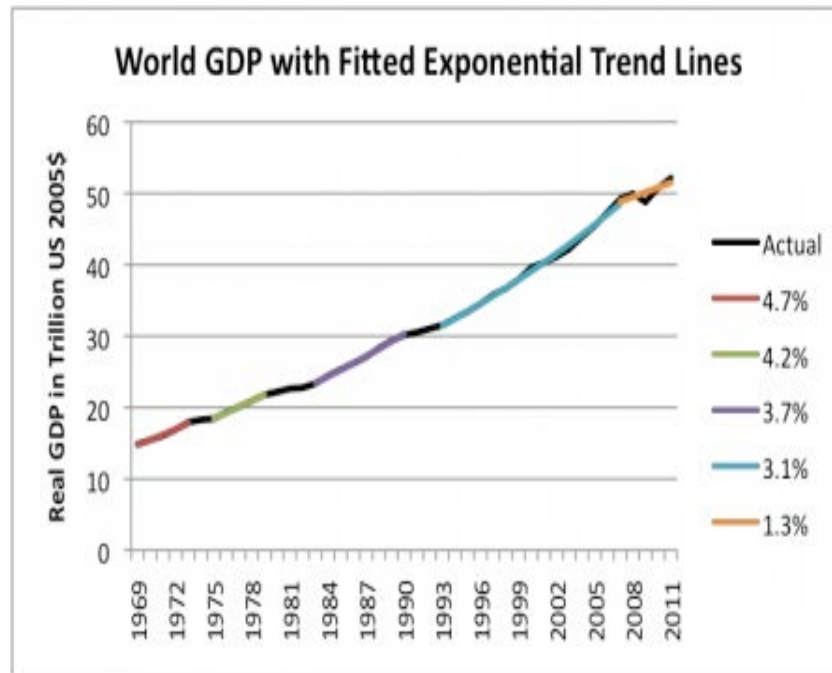


Figure 3. World Real GDP, with fitted exponential trend lines for selected time periods. World Real GDP data from USDA Economic Research Service. Fitted periods are 1969-1973. 1975-1979, 1983-1990, 1993-2007, and 2007-2011. Graph from Gail Tverberg (2012d), '[Evidence that Oil Limits are Leading to Declining Economic Growth.](#)'

Several economists and energy analysts (Murphy and Hall, 2011a-b; Stern and Kander, 2011; Tverberg, 2012a-b; Rubin, 2012) have started placing energy at the centre of macro-economic models (see also, Georgescu-Roegen, 1971), and these models provide grounds for thinking that the end of the age of cheap oil may very well signify the twilight of economic growth. Prominent energy-economists, Murphy and Hall (2011a: 70), make the essential point as follows:

when energy prices increase, expenditures are re-allocated from areas that had previously added to GDP, mainly discretionary consumption, towards simply paying for the more expensive energy. In this way, higher energy prices lead to recessions by diverting money from the economy towards energy only. The data show that recessions occur when petroleum expenditures as a percent of GDP climb above a threshold of roughly 5.5%.

If economic growth is indeed dependent on a threshold energy price in this way, then it is very likely that we are approaching a momentous turning point in human history. For two centuries the dominant narrative of human progress has been based on economic growth (Purdey, 2010), but if growth depends on cheap oil, the current stagnation in crude oil supplies may very well be ushering in the 'end of growth.' Figure 4 below shows a trend that suggests that

very soon we should expect the world economy to stop growing. This is something that is going to change the world so fundamentally that its foreseeable arrival ought to be taken very seriously indeed. Unfortunately, most people, including the world's leaders, remain firmly entrenched in a macro-economic paradigm that seeks or assumes cheap energy and expects growth without limits. That paradigm, however, is in the process of colliding with reality (Meadows et al, 2004; Bardi, 2011).

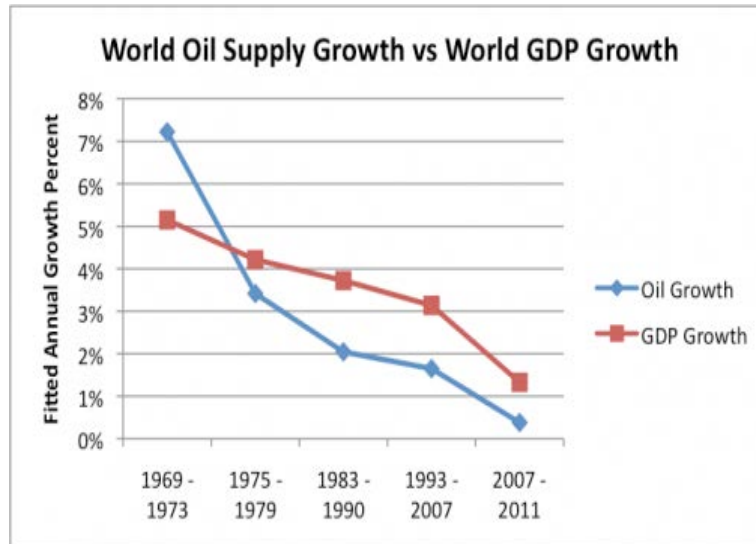


Figure 4. World Oil Supply Growth vs. Growth in World GDP, based on exponential trend lines fitted to values for selected groups of years. World GDP based on USDA Economic Research Data. Graph from Gail Tverberg (2012d), [‘Evidence that Oil Limits are Leading to Declining Economic Growth.’](#)

A further economic point to consider in this context is that the trillions of dollars of debt that many nations have taken on in recent decades was predicated on the assumption that future growth would be similar to the growth experienced over the last few decades. But if it is the case that we have entered the twilight of economic growth, those debts may very well become bad debts, and sooner than anyone might like to think. This would destabilise the highly interconnected global economy, with implications that no one can really foresee with any precision, due to the many unpredictable variables at play. Suffice it to say that it would probably not be good news. Exactly how to transition away from a debt-based and growth-based monetary system, and what to replace it with, are questions far beyond the scope of this paper; but these are questions that must be given more attention (see Douthwaite and Fallon, 2011; Trainer, 2011).

For present purposes, the most important economic dynamics of expensive oil can be summarised as follows.

Crude oil production seems to have reached an undulating plateau, and growth in overall oil supplies is very small. The unexpectedly high decline rates in existing wells (IEA, 2008) means that the supply of non-conventional oil and biofuels have been struggling to offset those declines. As more nations pass their peak production in coming years, and as existing wells continue to decline, a stagnation and eventual decline in overall oil supplies (or share of the supplies) seems highly likely, and eventually inevitable. When we realise that *demand* for oil is still expected to grow significantly, despite this stagnation and decline in supply, the economic implications of peak oil become clear.

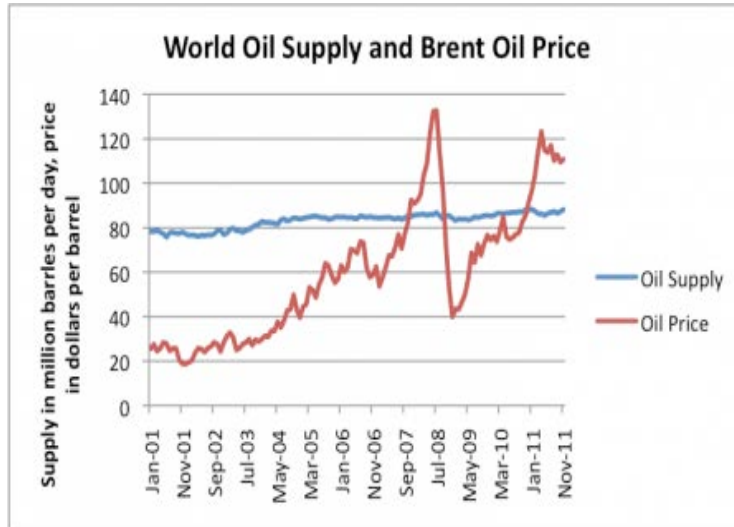


Figure 5. Brent oil spot price and world oil supply (broadly defined), based on EIA data. Graph from Gail Tverberg (2012e), [‘Why High Oil Prices Are Now Affecting Europe More Than the US.’](#)

The most basic economic principles tell us that as the supply of a commodity decreases and demand increases, the price of that commodity will tend to increase. That is what the world can expect in the future, and in fact today’s high oil prices are primarily a result of these dynamics of supply and demand already beginning to operate in the global oil markets. And here we are touching on what is arguably the most important implication of the ‘peak oil’ phenomenon. The issue is not that the world will ever run out of oil, a point that should not be forgotten. The issue is that we have reached the end of the age of *cheap* oil, a point acknowledged even by the most mainstream institutions (IEA, 2010b). These supply and demand dynamics described above are exacerbated by the fact that alternatives to crude oil – such as the non-conventional oil derived from the tar sands or deep-sea drilling, or biofuels – are always much more expensive to produce, due primarily to their lower energy returns on investment (Murphy and Hall, 2011b).

Over the last few years we have seen how fragile and delicate the global economic system is – owing in a large part to its dependency on cheap oil. More specifically, we saw the price of oil increase steadily as the peak of crude oil was approached; and as the supply of crude oil stagnated while demand continued to increase, we saw the price of oil spike to historic highs in July 2008 (see Figure, 5 above). Although mainstream media attributed the global economic crash in 2008 to the sub-prime fiasco that originated on Wall Street and materialised in Cleveland – and while there is surely some truth to that account – the untold story is the role that oil prices played, and continues to play, in the global financial crisis. In other words, the global financial crisis is arguably a product of expensive oil, not sub-prime lending (e.g. Rubin, 2009; 2012), in the sense at least that the bursting of the property bubble in the US was driven in large part by high oil prices.

This view receives some further support from economist, James Hamilton (2010), who has shown in a recent paper that 10 out of the 11 economic recessions experienced by the US post-WII were preceded by high oil prices. There are others (e.g. Stern and Kander, 2011; Ayers and Warr, 2009; 2010) who have also drawn the same connection between economic growth and energy supply. Given how dependent the global economy is on cheap oil,

however, it is rather surprising that so few people have made the link between the economic crash and the spike in oil prices.

Unfortunately, this is probably a lesson that is going to be taught and retaught in coming years and decades (Tverberg, 2012a). The global economy simply cannot withstand the economic impacts of oil prices much in excess of \$100 per barrel – primarily because so much trade is now international and therefore dependent on oil for the transportation of goods. But when oil prices get so high that the economy cannot function – which arguably is what happened in 2008 – the economy struggles to grow, and this reduction in economic activity means a reduction in oil demand, and this reduced demand makes the price of oil crash also. This is what happened, in fact, after the crash in 2008 (see Figure, 5 above), and it is what typically happens when the demand for oil is reduced because of economic recession. Low oil prices, however, then aid economic recovery, but as economies recover from recession and begin to grow again, this puts more demand pressure on stagnating oil supplies, and the cycle repeats itself. Put otherwise, oil prices increase till economic breaking point, then economies crash, which leads to a crash in oil prices; the low oil prices then facilitate economic recovery, which puts more demand pressure on oil, leading prices to rise till economic breaking point, and so and so forth.

This cycle of bust-recovery-bust is probably what we should expect in coming years and decades, and as oil supplies decline, economic contraction is what we should expect and prepare for. The world is unlikely to escape this unhappy cycle until it transitions beyond a growth-based economy and breaks its addiction to oil. But that implies creating a fundamentally different type of economy, probably something resembling Ted Trainer's 'Simpler Way' (Trainer, 2010b; Alexander, 2012e), and if one honestly assesses the likelihood of such a voluntary transition, the chances look slim to non-existent.

This point about breaking our addiction to oil deserves some brief elaboration, because it raises the spectre of what Tom Murphy (2011) has called the 'energy trap.' In order to break the addiction to oil, economies dependent on oil arguably need to invest huge amounts of money and energy in building new social and economic infrastructures that are not so heavily dependent on oil (e.g. efficient public transport systems to incentivise people to drive less; localise food production and critical manufacturing, etc.). But since this transition has not yet seriously begun, the necessary investment of money and energy is going to be required at a time when money and energy are scarcer than they have been in recent decades. This places us in the 'energy trap.' Politicians are going to have a short-term incentive *not* to invest extra money and energy in new infrastructure, since people will already be feeling the pinch of high oil prices. This means that there will be very little or no surplus money and energy to direct towards the necessary infrastructure projects. But while this will provide some short-term relief for people and politicians, it delays the inevitable need for that new infrastructure. But a delay only exacerbates the problem, since the necessary investment will then need to come later, at a time when energy and money are scarcer still (see also, Hirsch et al, 2005).

3. Conclusion

This report has attempted to outline in a very preliminary way some of the most important aspects of the relationship between energy and economics. As noted from the outset, the purpose was not to close the discussion, but to draw more attention to the issues under consideration.

Economic growth requires energy, especially oil. Stagnating oil production, however, is happening at a time when demand is continuing to rise. This means that oil is going to get more expensive – a consequence already playing out – but it is not clear that our economies can function on oil prices much above \$100 per barrel or when total oil expenditure exceeds roughly 5.5% of GDP. The exact figures can be debated, and will be debated. But a strong case can be made that the price implications of slow-to-negligible growth in crude oil production is causing the global economy to stagnate, leading, among other things, to the inability of many households, firms, and nations to meet their debt obligations. This is causing significant economic instability around the world, and as oil prices rise in the future the situation is probably only going to get worse. This is not a happy message to convey, but in order to respond to problems effectively it is important that first their gravity is recognised and acknowledged.

In closing, I wish to reiterate the point raised in the introduction about the revolutionary implications of decarbonising our economies as a response to climate change. The latest evidence on climate change (see McKibben, 2012) does not present a pretty picture, implying that globally efforts to reduce fossil fuel consumption must increase by several orders of magnitude. A reduction of 80% by 2050 is a figure that is widely discussed as an appropriate goal, but that figure is rarely considered in the context of energy's relationship to economic output.

Although it is wildly optimistic to suppose that the world is actually going to reduce fossil fuel consumption 80% by 2050 (see Figure 6 and 7 below), suppose it did? Suppose further that renewable energy is able to be ramped up so that total energy consumption is 'only' reduced by 50%. Since, as we have seen, productive activity is closely tied to energy consumption, exactly what type of economy would exist if the global economy only used half as much energy as it does today?

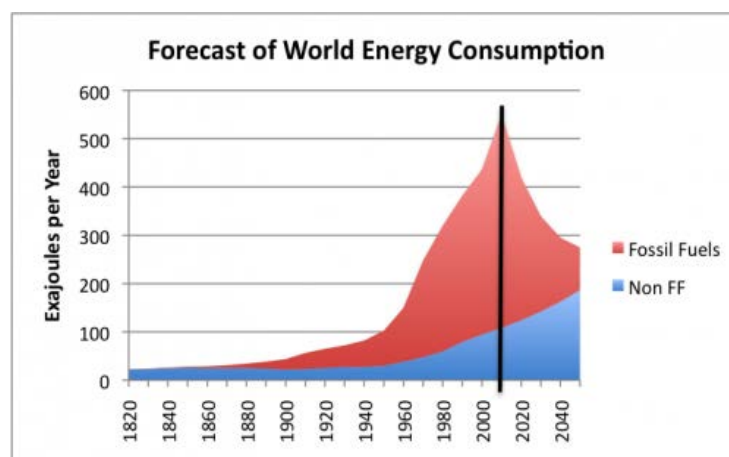


Figure 6. Forecast of world energy consumption, assuming fossil fuel consumption decreases by 80% by 2050, and non fossil fuels increase so that total fuel consumption decreases by 'only' 50%. Amounts before black line are actual; amounts after black lines are forecast in this scenario. Graph from Gail Tverberg (2012c), ['World Energy Consumption Since 1820 in Charts.'](#)

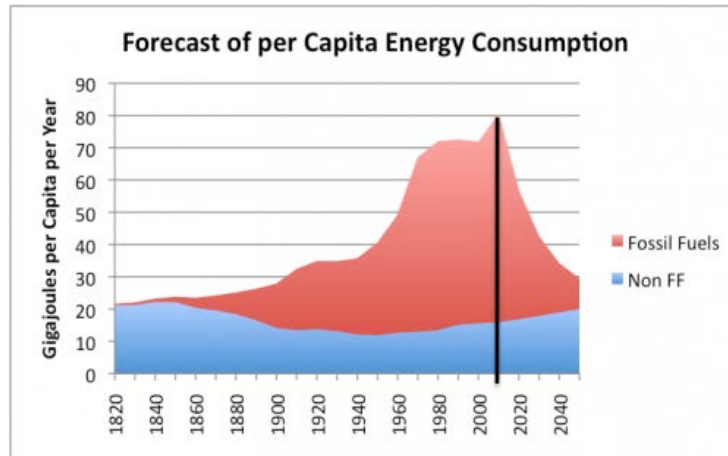


Figure 7. Forecast of per capita energy consumption, using the energy estimates in Figure 6 divided by world population estimates by the UN. Amounts before the black line are actual; after the black line are estimates. Graph from Gail Tverberg (2012c), '[World Energy Consumption Since 1820 in Charts](#).'

That is the question we must ask ourselves if we are truly attempting to understand what a transition to a just and sustainable world would look like. And if we ever managed to create such a world, it would seem that sustainable levels of resource and energy consumption would mean that we would all be living lives of radical simplicity. I hasten to add that this need not, in itself, be an undesirable change, if it were voluntarily chosen and wisely negotiated. Indeed, I am convinced that there can still be a 'prosperous way down' (Odum and Odum, 2001; Alexander, 2012d). But if, due to some form of collapse scenario, radical simplicity were to be forced upon people in coming decades, as it is already for many people today, one must admit that life in the future is going to entail unprecedented levels of suffering.

We are at the crossroads and are in the process of choosing our fate.

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Nash dynamics of the wealthy, powerful, and privileged: America's two-player, *Darwin metaeconomy*¹

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Abstract

This essay on capitalism's '*Darwin metaeconomy*' presents a paradigm shift that can take economics back to its origin in moral philosophy. Proposed for economics in the 21st century, this paradigm shift is grounded on the thesis that the United States is avariciously governed behind the scenes by a ruling elite through a two-player *Darwin metaeconomy* ('survival of the wealthiest', collectively) that today, post the 2008 Great Recession, has evolved into a real-world Nash equilibrium of opposed forces: Wall Street's wealthiest 1% v. the 99% on Main Street. In the moral philosophy of this essay's two-player Nash dynamics, the corporate elite rule the nation in collusion with those willing to take their money, for which in return – behind the scenes politically – those thus willing support ruling elite interests. The elite rules in capitalism's *Darwin metaeconomics*, deceptively behind the scenes, through collusion that is architectonic in character (structurally embedded).

The ruling elite and middle class of capitalism in this essay are two macro players in a real-world 'Nash dynamics' in which each is working to establish and maintain an economic, political, and social order favorable to their side. A key concept in this model is capitalism's 'metaeconomics' (Schumacher 1999) of the wealthiest 1% – a Darwinian 'survival of the wealthiest' analogue of biology's 'survival of the fittest'; which takes economics back to its origin in moral philosophy (in which morality 'greed is good'). The most fit to survive in this two-player *Darwin metaeconomy* of capitalism's two-player Nash dynamics are society's wealthiest 1%. Collectively this is the case, even though some of the wealthiest do not survive and some of those not wealthy become among the wealthiest. From a Darwinian perspective, those 'less wealthy' – in particular the very poor – fail to survive because of their inability to obtain and utilize scarce resources as efficiently and as fully as the wealthiest. However, capitalism's wealthiest – ruthlessly in fierce competition for private ownership of scarce resources – employ a real-world, Darwinian principle of 'natural selection': the collusion of capitalists as a ruling class against the general populace on Main Street, collusion that is 'architectonic' in character (structurally embedded in society economically and politically).

1. America's two-player Nash dynamics

Figure 1 diagrams the macro-social 'Prisoner's Dilemma' in American politics currently. In this two-player 'Nash dynamics' the state mutually most beneficial to both the ruling elite and populist middle class is the utopian alliance {P, E} (see Figure 1 below for key to letters). However, if the ruling elite were to fail to follow through in choosing P, then {E, E}, the alliance most favorable to the ruling elite and less favorable to the middle class, would follow. Similarly, if the middle class were to fail to follow through in choosing E, then {P, P}, the alliance most favorable to the middle class and less favorable to the ruling elite, would follow. So that, in order to most assuredly work toward a state of the nation that is most favorable to

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their respective class, regardless of what the other class does, each class must choose the strategy favoring their own, which political disconnect between the ruling elite and populist middle class today has resulted in the real-world Nash equilibrium {E, P}; which unfortunately appears to be the only 'state of the nation' that is logically possible in America's two-player metaeconomics. Given the real-world Nash equilibrium {E, P} in Figure 1 current today, neither player – elite or populist – can do better by unilaterally changing its strategy. The populist-favored alliance {P, P} and elitist-favored alliance {E, E} are different alliances of elites and populists having differing degrees of relative benefit for the two players involved. The utopian alliance {P, E} requires a degree of cooperation between the elite and middle class, based on mutually felt benevolence for each other, that will be difficult to engineer in America's ultra-competitive society in which wealth, power, and privilege are all that count in the collective mind of the ruling elite.

Figure 1: Nash dynamics of the wealthy, powerful, and privileged

| Nash Dynamics of America's <i>Darwin metaeconomy</i> : Corporate Ruling Elite v. Middle Class Populists | | Strategies of the populist middle class: the 99% and their economic, political, and social surrogates. | |
|--|---|---|--|
| | | P | E |
| Strategies of the ruling elite: society's wealthiest 1% and their economic, political, and social surrogates. | P | Roosevelt's New Deal: 1933-1980 | Utopian enterprises that depend on corporate benevolence |
| | E | The political disconnect of the corporate elite from the ideal of a robust middle class and opportunity for all: 2009-? | Reaganomics: 1981-2008 |
| <p>Strategy P: create legislation, implement policies, and carry out political agendas that 'promote the general welfare' of society's populist middle class; including the economically dispossessed, politically disenfranchised, and socially disempowered of the 99%.</p> <p>Strategy E: create legislation, implement policies, and carry out political agendas that promote the interests of the elite ruling class: society's wealthiest 1%, aka the politicians' so-called 'job creators.'</p> <p>Alliance {P, P}: the elite-populist compromise in which, for the purpose of achieving societal stability, priority is given to the general welfare.</p> <p>Alliance {E, E}: the elite-populist compromise in which, after societal stability has been achieved, priority is given to elite special interests.</p> <p>Equilibrium {E, P}: a political disconnect of the elite ruling class from the American ideal of a robust middle class and opportunity for all in which there is no alliance between the ruling elite and the middle class; the elitist politics of which has minimal regard for the welfare of the middle class, and the American populace generally.</p> <p>Alliance {P, E}: an utopian political agreement, between the populist middle class and elite ruling class, in which each class supports the interests of not only its own, but benevolently that of the other class as well.</p> | | | |

Considered in terms of modern economic (game) theory, in a macro two-player *Darwin metaeconomy*, the United States today has established a real-world 'Nash equilibrium' (Basu 2011: p. 60-66; Nasar 2011: Ch. 10; Nash Equilibrium, Wikipedia): one player being the ruling elite on 'Wall Street', the other the middle class and populace more generally on 'Main Street'; each seeking survival in a ruthless competitive environment – a two-player *Darwin metaeconomy* in which the wealthiest survive collectively – in which Wall Street's ruling elite are economic and political predators of America's middle class and the populace generally (society's populist, more egalitarian-minded citizens).

Figure 1 diagrams the 'strategic alliances' established in the United States – post-Great Depression – between the nation's ruling elite and middle class. The first, post-Great Depression strategic alliance initiated in 1933 through President Roosevelt's New Deal; the elite-populist alliance of which, although slowly changing through ruling elite collusion, from {P, P} to {E, E} during President Reagan's tenure in office, gained political strength until the Great Recession of 2008. Figure 1 thus depicts a two-player, Darwin 'metaeconomics', whose players – in opposition struggling to survive – are Wall Street's ruling elite and Main Street's populist middle class. The middle-class favored alliance {P, P}, roughly from 1933, (The New Deal, Wikipedia) to 1981 (Reaganomics, Wikipedia), was gradually phased out in the 1980's through collusion by capitalism's ruling elite; by surreptitiously replacing {P, P} with the ruling-elite favored alliance {E, E}, which lasted until the Great Recession of 2008. At this time {E, E} was quickly left behind (politically) through the strong populist counter-reaction of the 2008 presidential election, in response to the extreme economic and political excesses of {E, E} committed by the G. W. Bush presidency; which counter-reaction has produced a 99% movement that is pushing the United States toward a new 20th century alliance {P, P} that is strongly opposed by capitalism's ruling elite, who are pushing back toward regaining the previous elite favored 19th century alliance {E, E}; the opposed forces of which today now constitute the real-world, elite-populist Nash equilibrium {E, P}, which is the current political disconnect of the ruling elite from any alliance with the populist middle class, other than a renewal of the previous alliance {E, E} that caused the 2008 Great Recession. It is beyond the scope of the present essay, but the historical transitions in Figure 1, surreptitiously from {P, P} to {E, E}, and now onward to {E, P}, provide an overarching analytical framework for explaining in considerable detail the political warfare that has been ongoing behind the scenes, historically, between the Republican and Democratic parties, from the Great Depression to the present. Appendix 1 lists all strategic transitions that are in principle possible in the Nash dynamics of Figure 1, very few of which actually occur, however.

Wall Street all along has been engaged in conspiracy against the middle class about what or who rules America – whether what actually rules the nation is the free market economy or an elite capitalist class. Its deception is based on an implicit denial that there exists a two-player *Darwin metaeconomy* in which the corporate elite rule over the middle class, ruthlessly behind the scenes. There is, they claim, no such thing – only the free market economy over which no one rules. The effort of conservative Republican politics today, however, to bring the American government under President Obama to a complete stop until they regain power (absolutely), is in fact Figure 1's political disconnect {E, P} of the corporate elite; which as well is a Machiavellian-inspired, real-world 'Nash equilibrium' that neither the middle class nor the ruling elite desire to sustain, both are currently trapped in the 'Prisoner's Dilemma' – which the American public alone can resolve next November in the 2012 election.

In the 'Nash alliances' of Figure 1, {P, P} and {E, E}, the contrary economic and political forces of self-interest, ruling elite v. populist middle class, were collectively unbalanced in one

direction or another; resulting in the creation or modification of societal momentum directed more toward the interests of one than the other. In today's Nash equilibrium however, divergent forces of self-interest are equal in magnitude and point in different directions, one toward a future alliance {P, P} and the other backward toward {E, E}. The ruling elite in this effort intend to maintain the momentum generated by the alliance {E, E}, while middle class populists intend to create a new momentum toward a 21st century alliance {P, P}. Class conflict in this essay's *Darwin metaeconomy* thus understood is an instinctively pursued 'Nash dynamics' that can be elaborated further within a Newtonian conceptual framework of 'metaeconomic' momentum, force, and inertia.

2. Concerning America's future

The question raised here concerning the future is whether the nation will be moved by the ruling elite (Wall Street's wealthiest 1%) backwards conspiratorially to the previous ruling elite alliance {E, E} of the wealthiest 1%; or whether today's populist 99% movement will gain the strength needed to move the nation forward, democratically, to the progressive, egalitarian alliance {P, P} rethought for the 21st century. It may be that populist upheaval on America's political Main Street (physically on the streets and virally on the internet may be required (once again), to transition the real-world Nash equilibrium (elite political disconnect) {E, P} progressively forward into a new 21st century alliance {P, P} between the ruling elite and middle class – the alliance demonstrated by 20th century history to be most equitable to America's middle class. A far less likely but still possible alternative will for the nation to somehow (miraculously) transition the nation – economically, politically, and socially – to the more utopian alliance {P, E}, and then work very hard to establish a government that can keep it there.

In Figure 1, the transition during the 1980's, from the middle class favored alliance {P, P} to ruling elite favored alliance {E, E}, occurred because the ruling elite were able (very conspiratorially) to convince, falsely according to the evidence now available on middle class income inequality (Stiglitz 2012), the middle class that {E, E}, interpreted by neoliberals as the New World Order to be supported by all peoples, is more beneficial to it than {P, P}, the old economic and political order supporting American workers in the 50's, 60's and 70's; the collusion of which was accomplished by the ruling elite post 1981 through the conservative Republican ideology of Reaganomics; and which collusion by the ruling elite is today pursued politically even more forcefully by the Republican 'Tea Party.' The evidence of America's post World War II economy, nevertheless, strongly supports the old economic order of {P, P} of American workers as being the economy that benefits the middle class most, relatively speaking in terms of full employment and less pronounced income inequality; which nonetheless over the past thirty years, through conservative, ruling elite collusion, has been progressively transformed economically and politically into the elitist favored alliance {E, E}.

The real-world Nash equilibrium {E, P} is due to two opposed sociopolitical currents: one through which the wealthiest 1% seek to return society to the previous elitist, plutocratic alliance {E, E}; the other pushing forward to a 21st century renewal of the populist egalitarian alliance {P, P}. Populist upheaval on America's 'Main Street', which in today's politics includes the Internet, may be required to transition the nation from the real-world Nash equilibrium {E, P} forward to the middle class favored, more egalitarian alliance {P, P} once again.

The more benevolent, utopian-like alliance in Figure 1, {P, E}, in which middle class support for ruling elite interests is reciprocated by ruling elite support for middle class interests, apparently is inherently unstable due to the avarice that is intrinsic to humanity. {P, E} can represent in principle the inherently unstable state of any utopian-inspired social order that, if somehow were entered into, would, depending on the relative size of opposed populist and elitist forces, ultimately transition (decompose) into {P, P} or {E, E}, or {E, P} even.

Considered within this theoretical framework, it could be that communism, perhaps initially utopian in character, was more or less in theory an alliance {P, E} between those who rule and the under classes; but which, following the Russian Revolution, then (perhaps) transitioned to a severe, autocratic, version of alliance {P, P}; but which then even later, after the fall of the USSR in the 1980's, (perhaps) transitioned in Russia to an equally severe, elite, autocratic alliance {E, E}. (This wild conjecture undoubtedly needs much more thought.)

3. America's two-player *Darwin metaeconomy*

Volumes have been written on Adam Smith's benevolent 'invisible hand', which according to neoclassical theory often – some might say always, in different ways – promotes, quite unintentionally, the interests of society generally. However, there are few, perhaps none, whether of the academic community or economists professionally, that have theoretically developed the Smithian theme in Appendix 2 of a general capitalist conspiracy against, and deception and oppression of, the public; so that capitalists collectively thus being collusive in general, often do not promote the interests of the larger society, even unintentionally. The present essay endeavors to rectify this collective oversight in a radical rethinking of Edward Conard's "Darwinian survival of the fittest" in *Unintended Consequences* (2012). Through the rethinking of capitalism thus inspired by Adam Smith in terms of a two-player *Darwin metaeconomy*, although rethinking not easily achieved by the American public, can Wall Street perhaps ultimately "be prevented from disturbing the [economic and political] tranquility of anybody but themselves."

The basic question addressed by this post-Great Depression model of America's economic and political history is: what best and most fundamentally characterizes capitalism's *Darwin metaeconomy*, whose sole objective (evolutionary end) apparently is the accumulation and concentration of all wealth, power, and privilege in the hands of ruling elite? The response is 'architectonic' collusion, by capitalists as a ruling class, which is structurally embedded so that plausible deniability can be maintained. One current deception accomplished, which is increasingly apparent to the middle class, is the conservative mantra that the ruling elite are the nation's 'job creators'; a title that more substantively belongs to the middle class – whose demand and ability to pay for goods and services is what actually creates jobs. Lacking the demand created by a robust middle class – in America, the ruling corporate elite do not invest in businesses that create jobs – not in America. They keep their money in the bank, safely ensconced in offshore accounts, or invested elsewhere beyond America's shores.

The "Fundamental Theorem" of *Darwin metaeconomics* is that, whether in economics, politics, or socially, rather than openly declaring and promoting their true intentions and objectives in the spirit of democracy, it is virtually always more effective for society's "ruling elite," as suggested by Adam Smith, to engage in collusion that achieves their objectives conspiratorially behind the scenes. The 'collective unconscious' propensity of which, whether

overtly intentional or not, results in architectonic collusion by capitalists against the middle class and populace generally.

Kaushik Basu states in *Beyond the Invisible Hand* that “in economics, the need for intuitive understanding is much greater than most economists would have you believe. Good economic policy requires a ‘feel’ for things over and above” a mathematical understanding of economics (2011: 14). Understanding the *Darwin metaeconomy* of Figure 1, including in particular the subversive role played by ruling elite collusion in economics, politics, and the larger society, requires a subjective feel for structural forces presently not mathematically tractable; but which nevertheless can be intuitively understood to a considerable degree. Indeed, this theory suggests that the mathematics of Nash equilibria currently pursued in neoclassical theory is on the wrong track, fundamentally; because, quite falsely, it treats the economy as if it operates completely independent of political and social forces. The real-world *Darwin metaeconomics* of Figure 1’s Nash dynamics manifests political logic that ultimately must take precedence over abstract mathematical models whose ‘economics’ is devoid of real-world content.

4. Dynamics of American exceptionalism

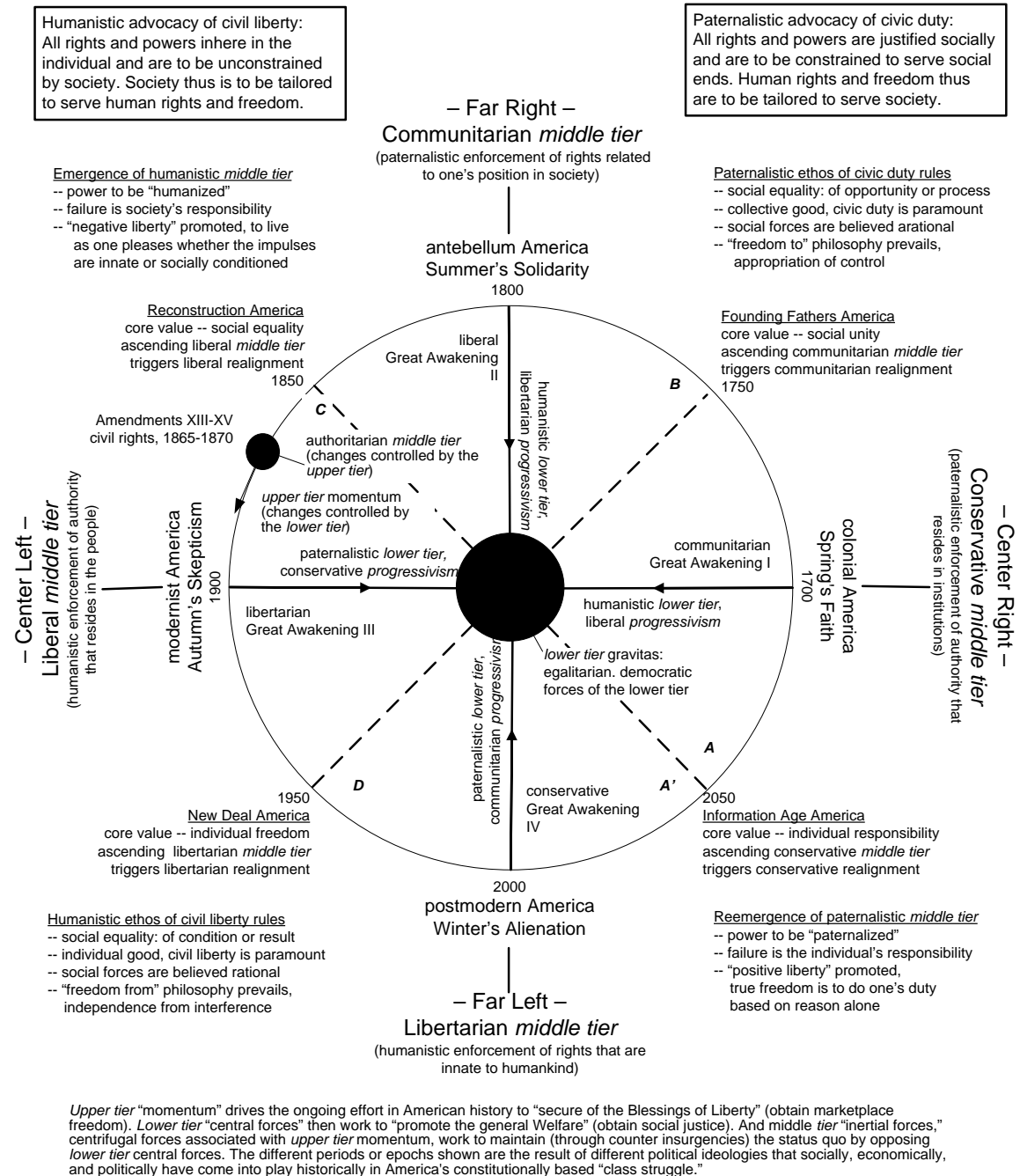
Figure 1’s ruling elite, working behind the scenes architectonically through Wall Street’s *Darwin metaeconomy*, eschew ethics and morality for the sake of wealth, power and privilege. Unseen and publicly denied, America’s ruling elite are unified in and through their collusion against the middle class and populace generally, through diverse mechanisms of architectonic collusion embedded in society structurally. The *Darwin metaeconomy* thus understood, which can be unconscious in part and conscious in part, intertwine the economic, political, and social sectors such that an historical, elite-populist ‘balance of power’, labeled the ‘Nash dynamics of American exceptionalism’ in Figure 2, is maintained between the forces sustaining and the forces working to change the status quo.

Figure 2 is the long-term metahistorical framework of Figure 1’s “Nash dynamics of the most wealthy, powerful, and privileged”, whose ruling elite are Wall Street’s wealthiest 1%. Taken from the NSF-SBE white paper ‘The Critical Geography of American Democracy: Tectonics of the Economic, Social, and Political (Zaman 2010), Figure 2 diagrams the dynamic balance of power argued to be maintained by America’s ruling elite over the under classes during the past 400 years; which this essay regards as ‘American exceptionalism’ truly: in which the economic ‘momentum’ of the ruling elite, through the political ‘inertial forces’ of government de facto controlled by the elite behind the scenes, has consistently minimized – but never eliminated – socially ‘impressed forces’ for progressive, egalitarian change. American exceptionalism in this view is Janus-faced: it is a Jekyll that in public promises equality and freedom for all, but behind the scenes is a Hyde that delivers much less of both than it promises.

What Figure 2’s metahistorical framework for Figure 1 may be suggesting is that the current Nash equilibrium of America’s two-player *Darwin metaeconomy* is the latest in the perpetual struggle of true democracy against capitalist oppression of the masses, worldwide; oppression fully supported today, conspiratorially behind the scenes, by ultra-conservative religious fervor in the last ditch effort of Western religion – Christianity in particular – to regain the oppressive, political hegemony it had in 17th century Europe, prior to capitalism’s emergence as Western society’s ruling paradigm. The coalition of conservative Christians in

America today, it seems, regard the most wealthy, powerful, and privileged of capitalism's corporate elite as its political savior; which responsibility the corporate elite very willingly accept.

Figure 2. Nash dynamics of American exceptionalism



Turning Points I, II, III, IV; Political Realignments A, B, C, D, A'

In the Nash dynamics of Figure 1 then, placed within the metahistorical framework of Figure 2, the 'fittest' (aka capitalism's wealthiest) survived by establishing a 'metahistorical momentum' that, through ruling elite architectonic collusion, worked to create and maintain (circa 1981-2008) the elite favored alliance {E, E} most desired by capitalism's fittest (the wealthiest, most powerful and privileged), the momentum of which successfully worked

against populism's prior 'metahistorical forces' for progressive, egalitarian change (circa 1933-1980).

America's populist middle class, those seen by capitalism's most fit to be 'less fit' than themselves, earlier in the years 1933-1980, sought and achieved a populist favored alliance {P, P} possessing a substantively different metahistorical momentum. Appendix 3 briefly describes the alliances and equilibrium in Figure 1 thus placed within the metahistorical framework of Figure 2.

Figure 2 is a dynamic 'balance of power in which the forces involved – for and against radical economic, political, and social change – are constantly evolving over time. This balance is one in which the nation's metahistorical momentum, driven by ruling elite avidity, moves society forward continuously against weaker populist forces for egalitarian change in a radically different direction, toward a more just society. The metahistorical balance of forces thereby maintained over the long term in Figure 2, by the wealthiest 1% on Wall Street and their minions in politics against the 99% on Main Street, thus is dynamic. Figure 2 takes 'progress' (social movement in whatever direction) as a given in human affairs; but it presents ruling elite avidity as having more generally energized this progress, behind the scenes historically from colonial days to the present.

The Nash dynamics of Figure 1 thus is suggestive that, in the real-world economy, the Nash equilibrium may be best understood as being, rather than something maintained over the long term in a stable society, something that is the precursor to radical change in economics, politics, or society in general. The political realignment A' in Figure 2 (circa 2050), in which 'postmodern America' transitions into what possibly will be a radical 21st rethinking of colonial American conservatism, may be what transpires after the nation escapes from the current two-player, metaeconomic Nash equilibrium {E, P}.

Figure 2 is elite political theory that shows the need for an ongoing 99% movement which opposes the middle class's historical economic dispossession, political disenfranchisement, and social disempowerment by Wall Street's ruling elite, its wealthiest 1%. The '99% movement', composed of the economically dispossessed and politically disenfranchised, and socially disempowered on Main Street, if it is to be effective, requires a radical critique of the ruthless *Darwin metaeconomy* that elaborates in principle what this movement is up against, shows what it therefore must do to succeed, and indicates what are the movement's long term prospects. Figure 2 give some indication of what may be required. The ruling elite today, in their overweening desire for wealth, power and privilege, have created a momentum that is libertarian in character, yet at the same time is pointed towards a future society that is ruthlessly conservative. Wall Street's ruling elite are doing this, in the name of economic freedom unrestrained by government regulation or oversight; by falsely persuading the public of the benefits to the middle class of the government unencumbered economy.

The diagram of the metahistory of U. S. elite rule in Figure 2 shows the ongoing transformation of American society, conspiratorially driven by the ruling elite; the wealthiest 1% of which today are increasingly seen as America's 'public enemy #1'. What these figures indicate has happened, historically in America repeatedly over the long term, is that the only true beneficence that capitalism has ever provided to the 99% was always pried out of the rapacious hands of the wealthiest 1%, through the social forces of a politically radicalized middle class; manifested in the past for example, in labor union strikes, widespread political demonstrations in the streets, occupation-type movements, and other forms of open political

and social protest by the people. The benefits accrued by the working classes, history has shown repeatedly with great clarity, has never been through the (supposed) benevolence of the invisible hand. The economic benefits given to the 99%, always obtained in response to the very visible hand of the American people in political protest, have virtually nothing to do with the capitalist's touted invisible hand.

An example today of ruling elite 'architectonic collusion' (structurally inculcated) by Wall Street, against the 99% on Main Street, through institutions favoring the ruling elite economic world view, is the prestigious American Enterprise Institute (AEI, Wikipedia); which is an unofficially neoconservative, corporate, right-leaning think tank that was initially founded in 1938 as the American Enterprise Association, by a group of New York businessmen in opposition to President Roosevelt's New Deal (Wikipedia). Manifestations of ruling elite collusion in America today are legion. They include the Hoover Institution (Wikipedia), the Heritage Foundation (Wikipedia), the Manhattan Institute (Wikipedia), the American Conservative Union (ACU, Wikipedia), the American Legislative Exchange Council (ALEC, Center for Media and Democracy), the Employment Policies Institute (Wikipedia), and the National Rifle Association (NRA, Wikipedia). They also include as well: currently elected, extreme right-wing, Republican state governors and legislators, the current Republican leadership in the United States Congress, today's Republican Tea Party in Congress and elsewhere; and the current conservatively dominated, corporate friendly Supreme Court, which apparently feels no judicial restraint in overturning past Supreme Court decisions on the basis of radical conservative ideology. The presidency of G. W. Bush, including cabinet officers and White House advisors, also was a conspiratorial manifestation of ruling elite collusion, as also are the neoliberalism and neoconservatism that were his presidency's ideological foundation.

Appendix 1: Figure 1's Nash strategic transitions

Unilateral transitions:

- {P, P} -> {P, E}: the elite maintain populist causes as a priority; populists reassign priority from their own causes to elite causes
- {P, P} -> {E, P}: the elite reassign priority from populist causes to their own; populists maintain their own causes as a priority
- {E, E} -> {P, E}: the elite reassign priority from their own causes to populist causes; populists maintain elite causes as a priority
- {E, E} -> {E, P}: the elite maintain their own causes as a priority; populists reassign priority from elite causes to their own*
- {E, P} -> {P, P}: the elite reassign priority from their own causes to populist causes; populists continue giving priority to their own causes**
- {E, P} -> {E, E}: the elite maintain their own causes as a priority; populists reassign priority from their own causes to elite causes***
- {P, E} -> {P, P}: the elite maintain populist causes as a priority; populists reassign priority from elite causes to their own
- {P, E} -> {E, E}: the elite reassign priority from populist causes to their own; populists maintain elite causes as a priority

Bilateral transitions:

{P, P} -> {E, E}: both the elite and populists reassign priority from populist causes to elite causes*

{E, E} -> {P, P}: both the elite and populists reassign priority from elite causes to populist causes

{P, E} -> {E, P}: both the elite and populists reassign priority from causes of the Other to their own

{E, P} -> {P, E}: both the elite and populists reassign priority from their own causes to that of the Other

*Transitions thus far actually occurring in American history post-Great depression, the bilateral transition of which was made possible by the ruling elite's *Isaac*.

** Transition now given priority by the populist middle class, which only the ruling elite can actually realize.

*** Transition now given priority by corporate ruling elite, which only the populist middle class can actually realize.

Appendix 2: Adam Smith's capitalist conspiracy

We rarely hear, it has been said, of the combinations of masters, though frequently of those of workmen. But whoever imagines, upon this account, that masters rarely combine, is as ignorant of the world as of the subject. Masters are always and everywhere in a sort of tacit, but constant and uniform, combinations, not to raise the wages of labor...these are always conducted with the utmost silence and secrecy. (Adam Smith, 1991: pp. 70-71; 1994: p. 76; 2004: p. 56.)

Our merchants and master manufacturers complain much of the bad effects of high wages in raising the price, and thereby lessening the sale of their goods, both at home and abroad. They say nothing concerning the bad effects of high profits; they are silent with regard to the pernicious effects of their own gains; they complain only of those of other people. (ibid. 1991: p. 104; 1994: p. 113; 2004: p. 84.)

People of the same trade seldom meet together, even for merriment and diversion, but [when they do] the conversation ends in a conspiracy against the public, or in some contrivance [collusion] to raise prices. (ibid. 1991: p. 137; 1994: p. 148; 2004: p. 112.)

The interest of the second order [workers], that of those who live by wages, is as strictly connected with the interest of society as that of the first [landowners]...His employers [businessmen] constitute the third order, that of those who live by profit...The interest of this third order therefore, has not the same connection with the general interest of the society, as that of the other two...As their thoughts...are commonly exercised rather about the interest of their own particular branch of business, than about that of society...The interest of the dealers...in any particular branch of trade or manufacture, is always in some respects different from, and even opposite to, that of the public. (ibid. 1991: pp. 218-19; 1994: pp. 286-87; 2004: pp. 180-81.)

He generally [the businessman], indeed, neither intends to promote the public interest, nor knows how much he is promoting it...he intends only his own gain; and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention. Nor is it always the worse for society that it was no part of it. By pursuing his own interest [often conspiratorially, as indicated above], he frequently promotes that of the society

[of the ruling elite in particular] more effectually than when he really intends to promote it. (ibid. 1991: pp. 51-52; 1994: pp. 484-85; 2004: p. 300.)

The proposal of any new law or regulation of commerce which comes from this order [those who live by profit], ought always to be listened to with great precaution, and ought never to be adopted till after having been long and carefully examined, not only with the most scrupulous, but with the most suspicious attention. It comes from an order of men, whose interest is never exactly the same with that of the public, who have generally an interest to deceive and even to oppress the public, and who accordingly have, upon many occasions, both deceived and oppressed it. (ibid. 1991: p. 220; 1994: p. 288; 2004: p. 181.)

Whenever the legislature attempts to regulate the differences between masters and their workmen, its counselors are always the masters. (ibid. 1991: p. 151; 1994: p. 164; 2004: p. 123.)

The sneaking arts of underling tradesmen are thus erected into political maxims for the conduct of a great empire. (ibid. 1991: p.382; 1994: p. 527; 2004: p. 326.)

[However] the mean rapacity, the monopolizing spirit, of merchants and manufacturers, who neither are, nor ought to be, the rulers of mankind, though it cannot, perhaps, be corrected, may very easily be prevented from disturbing the tranquility of anybody but themselves. (ibid. 1991: p. 383; 1994: p. 527; 2004: p. 327.)

Appendix 3: Figure 1's Nash dynamics of American exceptionalism

Figure 2 provides a metahistorical framework for the political alliances {P, P}, {E, E}, and {E, P} in Figure 1. A quadrumvirate of four historic, metaeconomic philosophies are in constant competition for economic, political, and social hegemony: conservatism (paternalistic authority), communitarianism (paternalistic rights), liberalism (humanistic authority), and libertarianism (humanistic rights). These four are postulated to historically inform America's Nash dynamics in Figure 1:

{P, P} alliance (1933-1980): because of concern over social unrest and fear of revolution in the thirties, if they did not to make middle class interests a priority, the ruling elite were coerced into doing so. During this historical interval the nation's ideological ground in politics, gradually evolving toward being both less liberal and more libertarian; under the impetus of an economic momentum that became less libertarian and more conservative; was countered by a populist gravitas (egalitarian, centrist forces for change) that became less conservative and more communitarian – cumulating in the 60's and 70's as an extreme, anti-authoritarian communitarianism ('make peace not war').

{E, E} alliance (1981-2008): in the face of the extreme personal libertarianism of radical forces for change exhibited in the 60's and 70's, ruling elite support for middle class interests dramatically reversed, conspiratorially against the middle class, and strongly toward their own. The middle class however, because of ruling elite deception and collusion regarding their true objectives, which were falsely characterized as being fundamentally 'communitarian' in character (the middle class benefits best through policies that promote ruling elite interests), are convinced they must join in making elite interests top priority. During this interval gradually, the nation's ideological ground in politics, reversing direction from being

strongly libertarian toward being less libertarian and more conservative; the economy, under the impetus of a momentum that is conservative overall, in fearful reaction to the excesses politically justified by libertarianism, has abandoned libertarianism and now is increasingly pointing toward a future, capitalist-based, post-neoconservative, communitarianism; which momentum of the ruling elite is continually countered by a populist gravitas (egalitarian, centrist force for change) that, although being communitarian overall, loses its conservative character and increasingly became more liberal, in reaction to ruling elite economic and political excesses of the past three decades.

{E, P} alliance (2009-?): the Great Recession of 2008 triggered post 2008 the nation's real-world Nash equilibrium, whose populist forces for egalitarian change have created today's 99% movement for a society more equitable to the middle class, both economically and politically. The counter-forces of the ruling elite, manifested politically as diametrically opposed 'inertial forces', have been relentless in blocking any future alliance {P, P} for the 21st century, as it once was 1933-1980 between the ruling elite and the middle class. All contrary reasoning about policies supporting the common good aside, the defeat of President Barack Obama in 2012 is the only thing that counts – even to the point of politically disenfranchising, through conservative dirty tricks that are eliminating in the 2011 election those who will vote for Obama in the election next fall. For only through his defeat can the nation be assured of sliding backward into the previous alliance {E, E}, in which ruling elite interests once again are paramount, even if in their fulfillment America's middle class is effectively destroyed.

Figure 2 is a dynamic 'balance of power' in which the forces involved – for and against economic, political, and social change – are constantly evolving over time. This balance is one in which the nation's economic momentum, driven by capitalism's 'Darwinian survival of the wealthiest', moves society forward continuously against weaker populist forces for egalitarian change in a radically different direction toward a more just society. The balance of forces maintained over the long term, by the wealthiest 1% on Wall Street and their minions in politics against the 99% on Main Street, thus is dynamic rather than static. Figure 2 takes 'progress', of one form or another, as a given in human affairs; but it presents ruling elite avarice as energizing this progress, behind the scenes historically from colonial days to the present.

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WEA 3-year plan

Capital as power: Toward a new cosmology of capitalism

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Preamble

Conventional theories of capitalism are mired in a deep crisis: after centuries of debate, they are still unable to tell us what capital is. Liberals and Marxists think of capital as an economic entity that they count in universal units of utils and abstract labour, respectively. But these units are totally fictitious: they can be neither observed nor measured. In this sense, they do not exist. And since liberalism and Marxism depend on these non-existing units, their theories hang in suspension. They cannot explain the process that matters most – the accumulation of capital.

This breakdown is no accident. Capitalism, we argue, is not a mode of production but a mode of power, and every mode of power evolves together with its dominant theories, dogmas and ideologies. In capitalism, these theories and ideologies originally belonged to the study of political economy – the first mechanical science of society. But as the capitalist mode of power kept changing and the quantitative revolution made it less and less opaque, the power underpinnings of capital grew increasingly visible and the science of political economy disintegrated. By the late nineteenth century, with dominant capital having taken command, political economy was bifurcated into two distinct spheres: economics and politics. And in the twentieth century, when the power logic of capital had already penetrated every corner of society, the remnants of political economy were further fractured into mutually distinct social sciences. Capital was completely monopolized by economists, leaving other social scientists with little or no say in its analysis. And nowadays, when the reign of capital is all but universal, social scientists find that they have no coherent framework to account for it.

The theory of capital as power offers a unified alternative to this fracture. It argues that capital is not a narrow economic entity, but a symbolic quantification of power. Capital is not absolute, it is relative. It has little to do with utility or abstract labour, and it extends far beyond machines and production lines. Most broadly, it represents the organized power of dominant capital groups to create the order of – or *creorder* – their society.

This view leads to a different cosmology of capitalism. It offers a new theoretical framework for capital based on the twin notions of dominant capital and differential accumulation, a new conception of the state and a new history of the capitalist mode of power. It also introduces new empirical research methods – including new categories; new ways of thinking about, relating and presenting data; new estimates and measurements; and, finally, the beginning of a non-equilibrium disaggregate accounting that reveals the conflictual dynamics of society.

¹ Shimshon Bichler teaches political economy at colleges and Universities in Israel. Jonathan Nitzan teaches political economy at York University in Toronto. All of their publications are available from *The Bichler & Nitzan Archives* (<http://bnarchives.net>). The first version of this paper was presented at the 2009 Rethinking Marxism Conference at the University of Massachusetts, Amherst, as part of a nine-panel series on capital as power. A second version was presented at the 2010 Eastern Economic Association Conference in Philadelphia, as part of a seven-panel series on the same subject. Parts of our argument draw on our recent book, *Capital as Power: A Study of Order and Creorder* (2009).

The capitalist cosmology

As Marx and Engels tell us at the beginning of [*The German Ideology* \(1970\)](#), the capitalist regime is inextricably bound up with its theories and ideologies. These theories and ideologies, first articulated by classical political economy, are much more than a passive attempt to explain, justify and critique the so-called economic system. Instead, they constitute an entire cosmology – a system of thinking that is both *active* and *totalizing*.

In ancient Greek, the verb *Kosmeo* has an active connotation: it means ‘to order’ and ‘to organize,’ and political economy does precisely that. It explains, justifies and critiques the world – but it also actively makes this world in the first place. Moreover, political economy pertains not only to the narrow economy as such, but also to the entire social order as well as to the natural universe in which this social order is embedded.

The purpose of this paper is to outline an alternative cosmology, one that offers the beginning of a totally different framework for understanding capitalism.

Of course, to suggest an alternative, we first need to know the thing that we contest and seek to replace. To lay out the groundwork, we begin by spelling out what we think are the hallmarks of the present capitalist cosmology. Following this initial step, we enumerate the reasons why, over the past century, this cosmology has gradually disintegrated – to the point of being unable to make sense of and recreate its world. And then, in closing, we articulate some of the key themes of our own theory – the theory of capital as power.

Foundation I: Separating economics from politics

Political economy, liberal as well as Marxist, stands on three key foundations: (I) a separation between economics and politics; (II) a Galilean/Cartesian/Newtonian mechanical understanding of the economy; and (III) a value theory that breaks the economy into two spheres – real and nominal – and that uses the quantities of the real sphere to explain the appearances of the nominal one. This and the following two sections examine these foundations, beginning with the separation between politics and economics.

During the thirteenth and fourteenth centuries, there emerged in the city states of Italy and the Low Countries an alternative to the rural feudal state. This alternative was the urban order of the capitalist bourg. The rulers of the bourg were the capitalists to be. They were the owners of money, trading houses and ships; they were the managers of industry; they were the enterprising pursuers of new social technologies, the seekers of innovative methods of production.

These early capitalists offered an entirely new way of organizing society. Instead of the vertical feudal order in which privilege and income were obtained by force and sanctified by religion, they brought a flat civil order where privilege and income came from rational productivity. Instead of authoritarian collectivism, they offered individual independence. Instead of the closed loop of agricultural redistribution by confiscation, they promised open-ended industrial growth. Instead of ignorance, they brought progress and knowledge. Instead

of subservience, they offered opportunity.² Theirs was the *future regime of capital*, an explicitly 'economic' order based on an endless cycle of production and consumption and the ever-growing accumulation of money.

Initially, the bourg was subservient to the feudal order in which it emerged, but that status gradually changed. The bourgs began to demand and obtain *libertates* – that is, *differential* exceptions from feudal penalties, taxes and levies. The bourgeoisie recognized the legitimacy of feudal politics, particularly in matters of religion and war. But it demanded that this politics not impinge on its urban economy. In our view, this early class struggle, the power conflict between the declining nobility and the rising bourgeoisie, is the origin of what we now consider as the separation of economics and politics.³

The features of this separation are worth summarizing, beginning with the liberal view. Over the past half millennium, liberals have grown accustomed to classifying production, technology, trade, income and profit as aspects of the economy. By contrast, entities like state, law, army and violence are classified as belonging to politics.

The economy is taken to be the productive source. It is the realm of individual freedom, rationality, frugality and dynamism. It creates output, raises consumption and moves society forward. By contrast, politics is conceived as coercive-collective. It is corrupt, wasteful and conservative. It is a parasitical sphere that latches onto the economy, taxing it and intervening in its operations.

Ideally, the economy should be left on its own. *Laissez faire* politics would produce the optimal economic outcome. But in practice, we are told, this is never the case: political intervention constantly distorts economics, undermines its efficient operation and hampers the production of individual well-being. The liberal equation, then, is simple: the best society is one with the most economics and the least politics.

The Marxist view of this separation is different, but not entirely. For Marx, the liberal project of severing civil society from state is a misleading ideal, if not outright self-deception.⁴ The legal act of setting the private economy apart from public politics alienates property; and that very alienation, he says, serves to defend the private interests of capitalists against the collective pursuit of a free society. From this perspective, a seemingly independent political-legal structure is not antithetical but essential to the material economy: it allows the organs and bureaucracy of the state to legitimize capital, give accumulation a universal form and help maintain the capitalist system as a whole.

In other words, Marx readily accepts the liberal duality – but with a big twist. Where liberals see an inconsistency between economic well-being and political power, Marx sees two complementary forms of power: a material-economic base of exploitation and a supporting legal-state structure of oppression.

² The historical tension between the civil urban space of economy and capital and the coercive violent space of politics and state is explored from different perspectives in Lopez (1967), Tilly (1992) and Lefebvre (2003).

³ For more on this transformation and its associated debates, see Gerstenberger (2005).

⁴ Cf. [Marx and Engles \(1970: 64-5, 79-80\)](#) and [Marx \(1963: 19-20\)](#). See also Marx ([1973a](#); [1973b](#)).

Historically, the coercive institutions and organs of the state evolve as *necessary* complements to the economic mechanism of surplus extraction: together, they constitute the totality that Marxists refer to as a 'mode of production'. But the relationship between these two aspects is not symmetric: in any particular historical epoch, the nature and extent of state intervention are predicated on the concrete requirements of surplus extraction. To illustrate, during the nineteenth century, these requirements dictated the hands-off methods of *laissez faire*; toward the middle of the twentieth century, they called for the macro-management of Keynesianism; and at the beginning of the twenty-first century, they mandate the multifaceted regulations of financialized neoliberalism.

So unlike in the liberal cosmology, where society consists of utility-seeking individuals for whom the state is a specialized service provider at best and a distortion at worst, in the Marxist cosmology the state is necessary to the very possibility of capitalism. But that necessity is conditional on the state being distinct from – and ultimately subjugated to – the imperatives of accumulation.

Following the footsteps of his classical predecessors, particularly Adam Smith and David Ricardo, Marx, too, prioritized economics over politics. Enthralled by the methods and triumphs of bourgeois science, he looked for latent reasons, for the ultimate mechanical forces that lie behind and move the social appearances. And just like his bourgeois counterparts, he, too, found the locus of these forces in the 'economy'.⁵

The productive sphere, and especially the labour process, he argued, is the engine of social development. This is where use value is created, where surplus value is generated, where capital is accumulated. Production is the fountainhead. It is the ultimate 'source' from which the other spheres of society draw their energy – energy that they in turn use to help shape and sustain the sphere of production on which they so depend. And so, although for Marx capitalist economics and politics are deeply intertwined, their interaction is that of two conceptually distinct and asymmetric entities.⁶

⁵ In a famous passage in [*A Contribution to the Critique of Political Economy* \(1859: 20-1\)](#), Marx writes: 'In the social production of their existence, men inevitably enter into definite relations, which are independent of their will, namely relations of production appropriate to a given stage in the development of their material forces of production. The totality of these relations of production constitutes the economic structure of society, the real foundation, on which arises a legal and political superstructure and to which correspond definite forms of social consciousness. The mode of production of material life conditions the general process of social, political and intellectual life. It is not the consciousness of men that determines their existence, but their social existence that determines their consciousness'.

⁶ This separation haunts even the most innovative Marxists. Henry Lefebvre (2003), for example, introduced the notion of urban society as a way of transcending the base-superstructure of Marx's industrial society – only to find himself describing this new society in terms of . . . economics and politics.

Foundation II: The Galilean/Cartesian/Newtonian model of the economy

The new capitalist order emerged hand in hand with a political-scientific revolution – a revolution that was marked by the mechanical worldview of Machiavelli, Kepler, Galileo, Descartes, Hobbes, Locke, Hume, Leibnitz and, most importantly, Newton.⁷

It is common to argue that political economists have borrowed their metaphors and methods from the natural sciences. But we should note that the opposite is equally true, if not more so: in other words, the worldview of the scientists reflected their society.

Consider the following examples:

- Galileo and Newton were deeply inspired by Machiavelli's *The Prince* (1532). The Prince relentlessly pursues secular power for the sake of secular power. His concern is not the general good, but order and stability. And he achieves his goals not with divine help, but through the systematic application of calculated rationality.
- Hobbes' 'mechanical human being' was modelled after Galileo's pendulum, swinging between the quest for power on the one hand and the fear of death on the other – but, then, Galileo's own mechanical cosmos was itself a reflection of a society increasingly pervaded by machines.
- Newton could make up a world of independent bodies because he lived in a society that began to critique hierarchical power and praise and glorify individualism. He envisaged a liberal world in which every body was a lonely soul in the cosmos, interacting with but never dictating its will to other bodies. There is no ultimate cause in Newton, only *inter-dependence*.
- Descartes could emphasize the immediacy of cause and effect – the leaves move only if the wind touches them – because he lived in a world that increasingly contested religious mysteries and church-invoked miracles that operated at a distance.
- Lavoisier invented his accounting identity – the law of conservation of matter – while building a wall around Paris, trying to turn the city into a sealed container in order to capture the mass of its taxable income.
- Darwin's 'natural selection' was based on Malthus' population theory. And so on.

These relatively recent examples should not surprise us. Human beings tend to impose on the cosmos the power structure that governs their own society. In other words, they tend to *politicize nature*.⁸

In archaic societies, the gods are usually numerous, relatively equal and hardly omnipotent. Hierarchical, statist societies tend to impose a pantheon of gods. And absolute rule tends to

⁷ The fascinating evolution and path-breaking heroes of the mechanical worldview are described in Koestler's unparalleled history of cosmology (1959). The philosophical underpinnings of the scientific revolution, particularly in physics, are examined in Bechler (1991).

⁸ On the earliest history of such politicization, see Frankfort *et al.* (1946).

insist on a single god and a monotheistic religion. In each case, the forces that make up nature reflect, and in turn are reflected in, the forces that shape society.⁹

Capitalism is no exception to this historical rule. Consider the mechanical worldview. The liberal God is nothing but absolute rationality, or natural law. The language of God is mathematical, and therefore the structure of the universe is numerical. The universe that God created is flat, filled with numerous bodies that are not subservient and dependent, but free and interdependent. These bodies are propelled not by differential obligations, but by the universal force of gravity. They are attracted to and repelled from one another not by the will of the Almighty, but through the interaction of force and counterforce. And, finally, they are ordered not by decree, but by the invisible power of equilibrating inertia.

This flat universe mirrors the flat ideals of the liberal order. A liberal society consists of equally small actors, or particles, none of which is large enough to significantly affect the other particles/actors. These particles/actors are energized not by patriarchal responsibilities, but by scarcity – the gravitational force of the social universe. They are attracted to and repelled from one another not by feudal obligations, but through the universal-utilitarian functions of demand and supply. And they obey not a hierarchical rule, but the equilibrating force of the invisible hand of perfect competition.

Foundation III: Value theory and the duality of real and nominal

Capitalism is a system of commodities and therefore denominated in the universal units of price. To understand the nature and dynamics of this architecture, we need to understand prices, and that is why both liberal and Marxian political economies are founded on theories of value – the utility theory of value and the labour theory of value, respectively.

Value theories begin by splitting the economy itself into two parallel, quantitative spheres: real and nominal. The key is the real sphere. This is where production and consumption take place, where supply and demand interact, where utility and productivity are determined, where well-being and exploitation take place, where surplus value and profit are generated.

Now, on the face of it, it seems difficult if not impossible to quantify the real sphere: the entities of this sphere are qualitatively different, and that qualitative difference makes them quantitatively incommensurate.

For the economists, though, this problem is more apparent than real. Physicists and chemists express all measurements in terms of five fundamental quantities: distance, time, mass, electrical charge and heat. In this way, velocity can be defined as distance divided by time; acceleration is the time derivative of velocity; force is mass times acceleration, etc. And economists, according to themselves, are able to do the very same thing.

Economics, they say, has its own fundamental quantities: the fundamental quantity of the liberal universe is the util, and the fundamental quantity of the Marxist universe is socially

⁹ The history of the notion of force, from ancient thought to modern physics, is told in [Jammer \(1957\)](#). The social myths of the gods are narrated and studied in Graves (1944; [1957](#)).

necessary abstract labour.¹⁰ With these fundamental quantities, every real entity – from concrete labour, to commodities, to the capital stock – can be reduced to and expressed in the very same unit.

Parallel to the real sphere stands the nominal world of money and prices. This sphere constitutes the immediate appearance of the commodity system. But that is merely a derived appearance. In fact, the nominal sphere is nothing but a giant, symbolic mirror. It is a parallel domain whose universal dollar magnitudes merely reflect – sometimes accurately, sometimes not – the underlying real util and abstract labour quantities of production and consumption.

So we have a quantitative correspondence. The nominal sphere of prices reflects the real sphere of production and consumption. And the purpose of value theory is to explain this reflection/correspondence.

How does value theory sort out this correspondence? In the liberal version, the double-sided economy is assumed to be contained in a Newtonian-like space – a container that comes complete with its own invisible laws, or functions, whose role is to equilibrate quantities and prices. The Marxist version is very different, in that it emphasizes not equilibrium and harmony, but the conflictual/dialectical engine of the economy. However, here, too, there is a clear bifurcation between the real and the nominal, the productive and the financial. And here, too, there is an assumed set of rules – the historical laws of motion – that governs the long-term interaction of the two spheres.

Now, since these principles, or laws, are immutable, the role of the political economist, just like the role of the natural scientist, is simply to ‘discover’ them.¹¹ The method of discovery builds on the research paradigm of Galileo, Descartes and Newton on the one hand, and on the application of analytical probability and empirical statistics on the other. In this method, discovery takes place through the fusion of experimentation and generalization – a method that liberals apply through testing and prediction (albeit mostly of past events), and that Marxists apply through the dialectics of theory and praxis.

Finally, unlike economics, politics doesn’t have its own intrinsic rules. This difference has two important consequences. In the liberal case, the notion of a self-optimizing economy means that, with the exception of ‘externalities’, political intervention can only lead to sub-optimal outcomes. In the Marxist case, politics and state are inextricably bound up with production and the economy. However, since politics and state have no intrinsic rules of their own, they have to derive their logic from the economy – either strictly, as stipulated by structuralists, or loosely, as argued by instrumentalists.

¹⁰ The notion of abstract labour was first articulated by [Marx \(1859\)](#). The term util was coined by Fisher (1892).

¹¹ The Platonic notion that there exists an external rationality – and that human beings can do no more than discover this external rationality – was expressed, somewhat tongue in cheek, by the number theorist Paul Erdős. A Hungarian Jew, Erdős did not like God, whom he nicknamed SF (the supreme fascist). But God, whether likable or not, predetermined everything. In mathematics, God set not only the rules, but also the ultimate proofs of those rules. These proofs are written, so to speak, in ‘The Book’, and the mathematician’s role is simply to decipher its pages (Hoffman 1998). Most of the great philosopher-scientists – from Kepler and Descartes to Newton and Einstein – shared this view. They all assumed that the principles they looked for – be they the ‘laws of nature’ or the ‘language of God’ – were primordial and that their task was simply to ‘find’ them (Agassi 1990).

To sum up, then, the cosmology of capitalism is built on three key foundations. The first foundation is the separation between economics and politics. The economy is governed by its own laws, whereas politics either is derived from these economic laws or distorts them. The second foundation is a mechanical view of the economy itself – a view that is based on action and reaction, flat functions and the self-regulating forces of motion and equilibrium, and in which the role of the political economist is merely to discover these mechanical laws. The third foundation is the bifurcation of the economy itself into two quantitative spheres – real and nominal. The real sphere is enumerated in material units of consumption and production (utils or socially necessary abstract labour), while the nominal sphere is counted in money prices. But the two spheres are parallel: nominal prices merely mirror real quantities, and the mission of value theory is to explain their correspondence.

The rise of power and the demise of political economy

These foundations of the capitalist cosmology started to disintegrate in the second half of the nineteenth century, with the key reason being the very victory of capitalism. Note that political economy differed from all earlier cosmologies in that it was the first to substitute secular for religious force. But, like the gods, this secular force was still assumed to be heteronomous; i.e., it was an objective entity, external to society.

The victory of capitalism changed this latter perception. With the feudal order finally giving way to a full-fledged capitalist regime, it became increasingly apparent that force is imposed not from without, but from within. Instead of heteronomous force, there emerged autonomous power, and that shift changed everything.¹² With autonomous power, the dualities of economics/politics, the separation of real/nominal and the mechanical worldview of political economy were all seriously undermined. With these categories undermined, the presumed automaticity of political economy no longer held true. And with automaticity gone, political economy ceased being an objective science.

The recognition of power was affected by four important developments. The first development was the emergence of totally new units. By the late nineteenth and early twentieth centuries, the notion of atomistic interdependent actors had been replaced by large hierarchical organizations – from big business and large unions to big government and large NGOs – organizations that were big enough to alter their own circumstances as well as to affect one another.

The second development was the emergence of new phenomena, unknown to the classical political economists. By the beginning of the twentieth century, total war and a seemingly permanent war economy had been established as salient features of modern capitalism, features that appeared no less important than production and consumption. Governments started to actively engage in massive industrial and macro stabilization policies, policies that completely upset the presumed automaticity of the so-called economic sphere. More and more capitalists incorporated their businesses, and as incorporation became nearly universal, the result was to bureaucratize and socialize the very process of private accumulation. The singular act of labour grew not simpler and more homogeneous, but ever more complex, and many workers no longer lived at subsistence levels. There emerged a ‘labour aristocracy’, the

¹² The difference between heteronomy and autonomy is developed in the social and philosophical writings of Cornelius Castoriadis (see for example [1991](#)).

workers' standard of living in the main capitalist countries soared, and, with rising disposable income, issues of culture grew in importance relative to work. Finally, the nominal processes of inflation and finance assumed a life of their own, a life whose trajectory no longer seemed to reflect the so-called real sector.

The third development was the emergence of totally new concepts. With the rise of fascism and Nazism, the primacy of class and production was challenged by a new emphasis on masses, power, state, bureaucracy, elites and systems.

Fourth and finally, the objective/mechanical cosmology of the first political-scientific revolution was undermined by uncertainty, relativity and the entanglement of subject and object. Science was increasingly challenged by anti-scientific vitalism and postism.

The combined result of these developments was a growing divergence between universality and fracture. On the one hand, the regime of capital has become the most universal system ever to organize society: its rule has spread to every corner of the world and incorporated more and more aspects of human life. On the other hand, political economy – the cosmology of that order – has been fatally fractured: instead of what once was an integrated science of society fashioned after the universal laws of nature, there emerged a collection of partial, exclusionary and often incommensurate social disciplines.

The mainstream liberal study of society was split into numerous social sciences. These social sciences – economics, political science, sociology, anthropology, psychology, and now also management, international studies, urban and environmental studies, culture, communication, gender and other such offshoots – are each treated as a 'discipline', a closed system guarded by proprietary jargon, unique principles and a bureaucratic-academic hierarchy.

But this progressive fracturing did not save neoclassical political economy (now known as 'economics'). Although most economists refuse to know it and few would ever admit it, the emergence of power destroyed their fundamental quantities. With power, it became patently clear that both utils and abstract labour were logically impossible and empirically unknowable. And, sure enough, no liberal economist has ever been able to measure the util contents of commodities, and no Marxist has ever been able to calculate their abstract labour contents – because neither can be done. This inability is existential: with no fundamental quantities, value theory becomes impossible, and with no value theory, economics disintegrates.¹³

The neoclassical golem

The neoclassicists responded by trying to shield their utils from the destructive touch of power. The process was two-pronged. First, they created a heavily subsidized fantasy world, titled General Equilibrium, where, buttressed by a slew of highly restrictive assumptions,

¹³ The inability of economists to measure their fundamental quantities surfaced, at least in part, in the so called 'Cambridge Controversies' on the nature of capital. Following these debates, which raged during the 1950s and 1960s, it was conceded, even by staunch neoclassicists, that capital did not exist as an independent 'physical quantum', and that its magnitude could not be measured independently of prices and distribution. Given that the entire edifice of modern economics theory stands on capital, advertising this conclusion would have been devastating. It was much safer to sweep the entire debate under the carpet, with the result being that most contemporary economists are blissfully unaware of its existence. See, for example, [Robinson \(1953-54\)](#), [Sraffa \(1960\)](#), Harcourt (1969; 1972), Hodgson (1997) and the accessible summary in Hunt (2002: Ch. 16).

everything still works (almost) as it should.¹⁴ To achieve this end, though, they had to turn their economy into a null domain. They excluded from it almost every meaningful power phenomenon – and they did it so thoroughly that their perfectly competitive model now perfectly explains next to nothing.

The second step was to brand the excluded power phenomena ‘deviant’, and then hand them over to the practitioners of two newly-created sub-disciplines: micro ‘distortions’ and ‘imperfections’ were given to game theorists, while government ‘interventions’ and ‘shocks’ were passed on to the macroeconomists. These changes were legitimized by the Great Depression and accelerated by the subsequent development of the welfare-warfare state. The problem is that, over the past half century, game theory and macroeconomics have grown into a theoretical Golem. They have expanded tremendously, both bureaucratically and academically – and that expansion, instead of bolstering liberal cosmology, has seriously undermined it.

Although game theorists and macroeconomists rarely advertize it and many conveniently ignore it, their models, whether good or bad, are all affected by – and in many cases are exclusively concerned with – power. This is a crucial fact, because, once power is brought into the picture, all prices, income flows and asset stocks become ‘contaminated’. And when prices and distribution are infected with power, the utility theory of value becomes irrelevant.

Now, until the 1950s and 1960s, neoclassicists could still pretend that the extra-economic ‘distortions’ and ‘shocks’ were local, or at least temporary, and therefore redundant for the grander purpose of value analysis. But nowadays, with game theory increasingly taking over the micro analysis of distribution, and with governments directly determining 20 to 40 percent of economic activity and price setting and indirectly involved in much of the rest, power seems to be everywhere. And if power is now the rule rather than the exception, what then is left of the utility-productivity foundations of liberal value theory?

The neo-Marxist fracture

Unlike the neoclassicists, Marxists chose not to evade and hide power but to tackle it head on – although the end result was pretty much the same. To recognize power meant to abandon the labour theory of value. And since Marxists have never come up with another theory of value, their worldview has lost its main unifying force. Instead of the original Marxist totality, there emerged a neo-Marxist fracture.

Marxism today consists of three sub-disciplines, each with its own categories, logic and bureaucratic demarcations. The first sub-discipline is neo-Marxist economics, based on a mixture of monopoly capital and permanent government intervention. The second sub-discipline comprises neo-Marxist critiques of capitalist culture. And the third sub-discipline consists of neo-Marxist theories of the state.

Now, it is worth stressing here that both Marx and the neo-Marxists have had very meaningful things to say about the world. These include, among other things, a comprehensive vista of

¹⁴ We say ‘almost’ since the issue is not really settled. The highest academic authorities on the subject still debate, first, whether, even under the most stringent (read socially impossible) conditions, a unique general equilibrium can be shown to exist (at least on paper); and, second, if such equilibrium does exist, whether or not it is likely to persist for more than a fleeting moment.

human history – an approach that negates and supersedes the particular histories dictated by elites; the notion that ideas are dialectically embedded in their concrete material history; the fusion of theory and praxis; the view of capitalism as a totalizing political-power regime; the universalizing-globalizing tendencies of this regime; the dialectics of the class struggle; the fight against exploitation, oppression and imperial rule; and the emphasis on autonomy and freedom as the motivating force of human development.

These ideas are indispensable. More importantly, the development of these ideas is deeply enfolded, to use David Bohm's term, in the very history of the capitalist regime, and in that sense they can never be discarded as erroneous.¹⁵

But all of that still leaves a key issue unresolved. In the absence of a unifying value theory, there is no logically coherent and empirically meaningful way to explain the so-called economic entity of capital – let alone to account for how culture and the state presumably affect this entity. In other words, we have no explanation for the most important process of all – the accumulation of capital.

Capitalism, though, remains a universalizing system – and a universalizing system calls for a universal theory. So maybe it's time to stop the fracturing. We do not need finer and finer nuances. We do not need new sub-disciplines to be connected through inter- and trans-disciplinary links. And we do not need imperfections and distortions to tell us why our theories do not work.

What we do need is a radical Ctrl-Alt-Del. As Descartes tells us, to be radical means to go to the root, and the root of capitalism is the accumulation of capital. This, then, should be our new starting point.

The capitalist mode of power

In the remainder of the paper we briefly outline some of the key elements of our own approach to capital. We begin with power. We argue that capital is not means of production, it is not the ability to produce hedonic pleasure, and it is not a quantum of dead productive labour. Rather, capital is power, and only power.

Further, and more broadly, we suggest that capitalism is best viewed not as a mode of production or consumption, but as a *mode of power*. Machines, production and consumption of course are part of capitalism, and they certainly feature heavily in accumulation. But the role of these entities in the process of accumulation, whatever it may be, is significant primarily through the way they bear on power.

To explicate our argument, we start with two related entities: prices and capitalization. Capitalism – as we already noted, and as both liberals and Marxists correctly recognize – is organized as a commodity system denominated in prices. Capitalism is particularly conducive to numerical organization because it is based on private ownership, and anything that can be privately owned can be priced. This situation means that, as private ownership spreads spatially

¹⁵ The notion of enfoldment, or the nesting of different levels of theory, consciousness and order, is developed in Bohm (1980) and Bohm and Peat (1987).

and socially, price becomes the universal numerical unit with which the capitalist order is organized.

Now, the actual pattern of this order is created through capitalization. Capitalization, to paraphrase physicist David Bohm (in Bohm and Peat 1987), is the generative order of capitalism. It is the flexible and all-inclusive algorithm that continuously *creorders* – or creates the order of – capitalism.

Capitalizing power

What exactly is capitalization? Capitalization is a symbolic financial entity, a ritual that the capitalists use to discount to present value risk-adjusted expected future earnings. This ritual has a very long history. It was first invented in the capitalist bourgs of Europe during the fourteenth century, if not earlier. It overcame religious opposition to usury in the seventeenth century to become a conventional practice among bankers. Its mathematical formulae were first articulated by German foresters in the mid-nineteenth century. Its ideological and theoretical foundations were laid out at the turn of the twentieth century. It started to appear in textbooks around the 1950s, giving rise to a process that contemporary experts refer to as 'financialization'. And by the early twenty-first century, it has grown into the most powerful faith of all, with more followers than all of the world's religions combined.

Now, as Ulf Martin (2010) argues, capitalization is an operational-computational symbol. Unlike ontological symbols, capitalization is not a passive representation of the world. Instead, it is an active, synthetic calculation. It is a symbol that human beings create and impose on the world – and in so doing, they shape the world in the image of their symbol.

Capitalists – as well as everyone else – are conditioned to think of capital as capitalization, and nothing but capitalization. The ultimate question here is not the particular entity that the capitalist owns, but the universal worth of this entity defined as a capitalized asset.

Neoclassicists and Marxists recognize this symbolic creature – but given their view that capital is a (so-called) real economic entity, they do not quite know what to do with its symbolic appearance. The neoclassicists bypass the impasse by saying that, in principle, capitalization is merely the image of real capital – although, in practice, this image gets distorted by unfortunate market imperfections. The Marxists approach the problem from the opposite direction. They begin by assuming that capitalization is entirely fictitious – and therefore unrelated to the actual, or real, capital. But, then, in order to sustain their labour theory of value, they also insist that, occasionally, this fiction must crash into equality with real capital.

In our view, these attempts to make capitalization fit the box of real capital are an exercise in futility. As we already saw, not only does real capital lack an objective quantity, but the very separation of economics from politics – a separation that makes such objectivity possible in the first place – has become defunct. And, indeed, capitalization is hardly limited to the so-called economic sphere.

In principle, every stream of expected income is a candidate for capitalization. And since income streams are generated by social entities, processes, organizations and institutions, we end up with capitalization discounting not the so-called sphere of economics, but potentially every aspect of society. Human life, including its social habits and its genetic code,

is routinely capitalized. Institutions – from education and entertainment to religion and the law – are habitually capitalized. Voluntary social networks, urban violence, civil war and international conflict are regularly capitalized. Even the environmental future of humanity is capitalized. Nothing escapes the eyes of the discounters. If it generates expected future income, it can be capitalized, and whatever can be capitalized sooner or later *is* capitalized.

The encompassing nature of capitalization calls for an encompassing theory, and the unifying basis for such a theory, we argue, is power. The primacy of power is built right into the definition of private ownership. Note that the English word ‘private’ comes from the Latin *privatus*, which means ‘restricted’. In this sense, private ownership is wholly and only an institution of exclusion, and institutional exclusion is a matter of organized power.

Of course, exclusion does not have to be exercised. What matter here are the right to exclude and the ability to exact pecuniary terms for not exercising that right. This right and ability are the foundations of accumulation.

Capital, then, is nothing but organized power. This power has two sides: one qualitative, the other quantitative. The qualitative side comprises the institutions, processes and conflicts through which capitalists constantly *creorder* society, shaping and restricting its trajectory in order to extract their tributary income. The quantitative side is the process that integrates, reduces and distils these numerous qualitative processes down to the universal magnitude of capitalization.

Industry and business

What is the object of capitalist power? How does it *creorder* society? The answer begins with a conceptual distinction between the creative/productive potential of society – the sphere that Thorstein Veblen ([1904](#); 1923) called industry – and the realm of power that, in the capitalist epoch, takes the form of business.

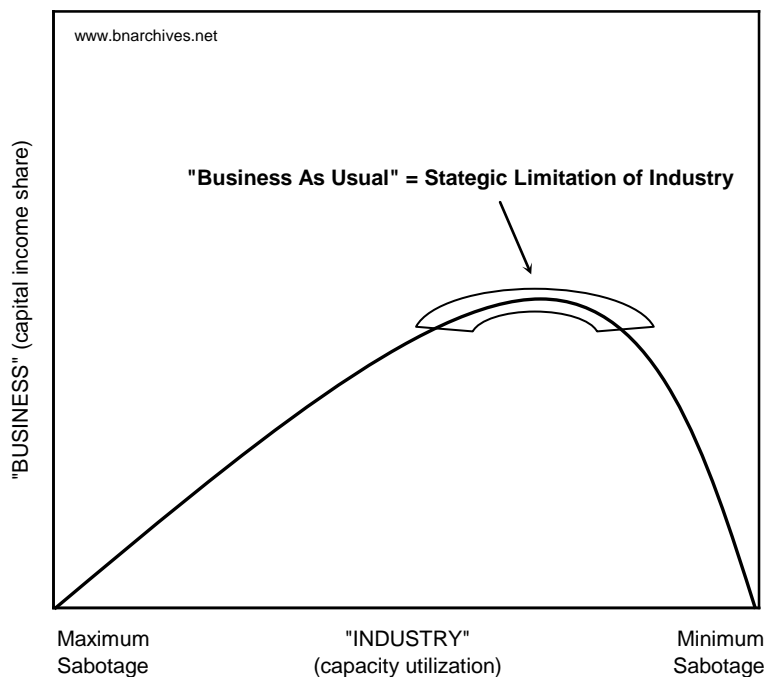
Using as a metaphor the concept of physicist Denis Gabor, we can think of the social process as a giant hologram, a space crisscrossed with incidental waves. Each social action – whether an act of industry or of business – is an event, an occurrence that generates vibrations throughout the social space. But there is a fundamental difference between the vibrations of industry and the vibrations of business. Industry, understood as the collective knowledge and creative effort of humanity, is inherently cooperative, integrated and synchronized. It operates best when its various events resonate with each other. Business, in contrast, is not collective; it is private. Its goals are achieved through the threat and exercise of systemic prevention and restriction – that is, through strategic sabotage. The key object of this sabotage is the resonating pulses of industry – a resonance that business constantly upsets through built-in dissonance.

Let us illustrate this interaction of business and industry with a simple example. Political economists, both mainstream and Marxist, postulate a positive relationship between production and profit. Capitalists, they argue, benefit from industrial activity – and, therefore, the more fully employed their equipment and workers, the greater their profit. But if we think of capital as power, exercised through the strategic sabotage of industry by business, the relationship becomes nonlinear – positive under certain circumstances, negative under others.¹⁶

¹⁶ Note that these considerations pertain only to the quantitative aspect of industrial activity; they do not deal with the qualitative nature of its output, or the conditions under which the output is produced.

This latter relationship is illustrated, hypothetically, in [Figure 1](#). The chart depicts the utilization of industrial capacity on the horizontal axis against the capitalist share of income on the vertical axis. Now, up to a point, the two move together. After that point, the relationship becomes negative. The reason for this inversion is easy to explain by looking at extremes. If industry came to a complete standstill at the bottom left corner of the chart, capitalist earnings would be nil. But capitalist earnings would also be zero if industry always and everywhere operated at full socio-technological capacity – depicted by the bottom right corner of the chart. Under this latter scenario, industrial considerations rather than business decisions would be paramount, production would no longer need the consent of owners, and these owners would be unable to extract their tributary earnings. For owners of capital, then, the ideal, Goldilocks condition, indicated by the top arc segment, lies somewhere in between: with high capitalist earnings being received in return for letting industry operate – though only at less than full potential.

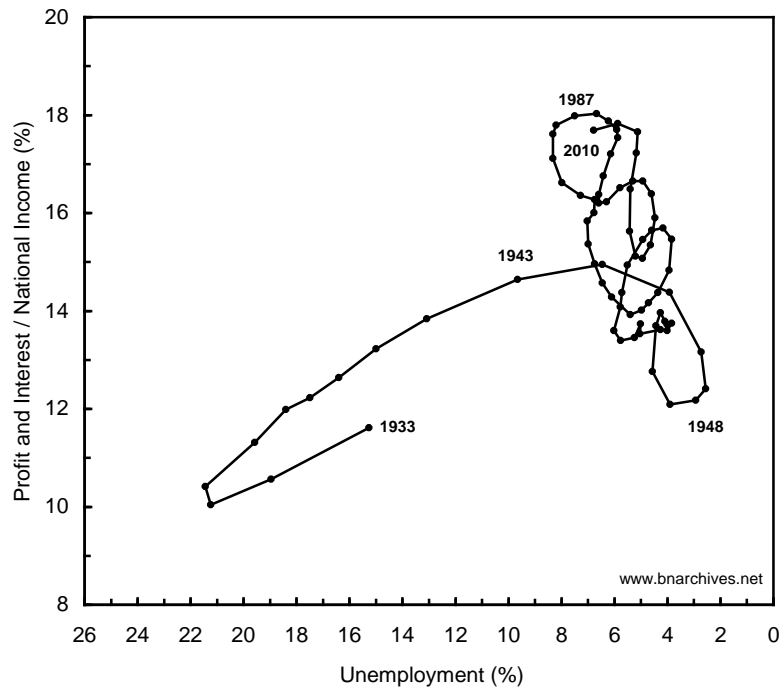
Figure 1:
Business and Industry



Now, having laid out the theory, let us look at the facts. [Figure 2](#) shows this relationship for the United States since the 1930s. The horizontal axis approximates the degree of sabotage by using the official rate of unemployment, inverted (notice that unemployment begins with zero on the right, indicating no sabotage, and that, as it increases to the left, so does sabotage). The vertical axis, as before, shows the share of national income received by capitalists.

Obviously, these latter aspects are equally important, and here, too, business sabotage often operates to restrict the human potential by forcing social activity into trajectories that are as harmful as they are profitable.

Figure 2:
Business and Industry in the United States



Note: Series are shown as 5-year moving averages.

Source: U.S. Department of Commerce through Global Insight
(series codes: INTNETAMISC for interest; ZBECON for profit;
YN for national income; RUC for the rate of unemployment).

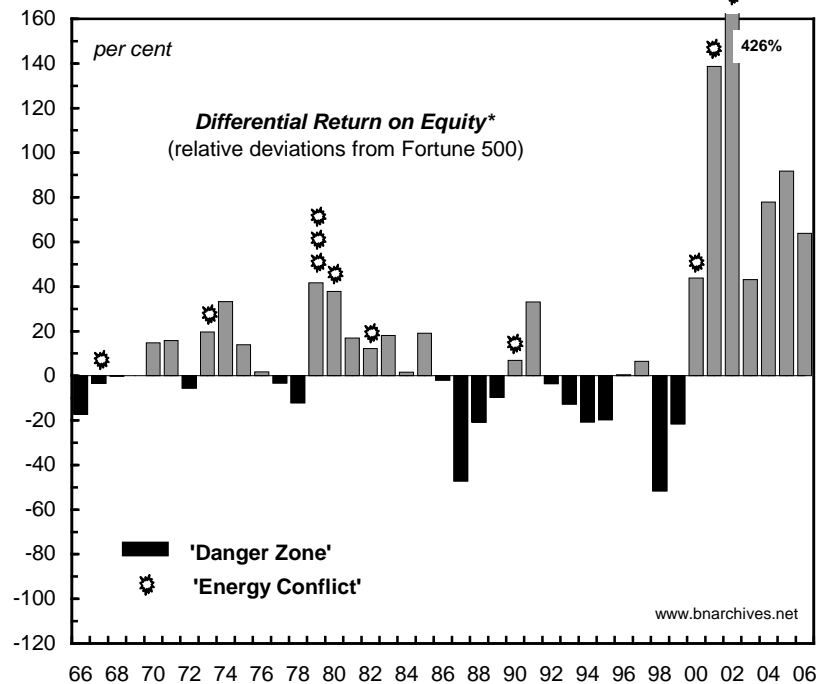
And lo and behold, what we see is very close to the theoretical claims made in [Figure 1](#). The best position for capitalists is not when industry is fully employed, but when the unemployment rate is around 7 percent. In other words, the so-called 'natural rate of unemployment' and 'business as usual' are two sides of the same power process: a process in which business accumulates by strategically sabotaging industry.

Differential accumulation

The neoclassical util and the Marxist unit of socially necessary abstract labour are absolute. By contrast, power is never absolute; it is always relative. For this reason, both the quantitative and qualitative aspects of capital accumulation have to be assessed differentially – that is, relative to other capitals. Contrary to standard political economy, liberal as well as Marxist, capitalists are driven not to maximize profit, but to 'beat the average' and 'exceed the normal rate of return'. Their entire existence is conditioned by the need to outperform, by the imperative to achieve not absolute accumulation, but differential accumulation. And that makes perfect sense. To beat the average means to accumulate faster than others; and since capital is power, capitalists who accumulate differentially increase their power.

Let us illustrate this process with another example, taken from our work on the Middle East.¹⁷ [Figure 3](#) shows the differential performance of the world's six leading privately owned oil companies relative to the Fortune 500 benchmark. Each bar in the chart measures the extent to which the oil companies' rate of return on equity exceeded or fell short of the Fortune 500 average. The grey bars show positive differential accumulation – i.e. the percentage by which the oil companies exceeded the Fortune 500 average. The black bars show negative differential accumulation; i.e. the percentage by which the oil companies trailed the average. Finally, the little explosion signs in the chart show the occurrences of 'Energy Conflicts' – that is, regional energy-related wars.

Figure 3:
The Petro-Core's Differential Accumulation and Middle East 'Energy Conflicts'



* Return on equity is the ratio of net profit to owners' equity. Differential return on equity is the difference between the return on equity of the Petro-Core and the Fortune 500, expressed as a per cent of the return on equity of the Fortune 500. For 1992-3, data for Fortune 500 companies are reported without SFAS 106 special charges.

Note. The Petro-Core consists of British Petroleum (BP-Amoco since 1998), Chevron (with Texaco since 2001), Exxon (ExxonMobil since 1999), Mobil (till 1998), Royal-Dutch/Shell and Texaco (till 2000). Company changes are due to merger. The Energy Conflicts include: the 1967 Arab-Israel war, the 1973 Arab-Israel war, the 1979 Iranian Revolution, the 1979 first Israeli invasion of Lebanon, the 1979 Soviet invasion of Afghanistan, the 1980 Iran-Iraq war, the 1982 second Israeli invasion of Lebanon, the 1990-1 first Gulf War, the 2000 second Palestinian Intifada, the 2001-2 U.S. invasion of Afghanistan and the launching of the "War on Terror" and the 2002-3 second Gulf War.

Source: *Fortune*; Standard & Poor's *Compustat*.

¹⁷ See, for example, [Nitzan and Bichler \(2002: Ch. 5\)](#), [Bichler and Nitzan \(2004\)](#) and [Nitzan and Bichler \(2006\)](#).

Note that conventional economics has no interest in the differential profits of the oil companies, and it certainly has nothing to say about the relationship between these differential profits and regional wars. Differential profit is perhaps of some interest to financial analysts. Middle-East wars are the business of experts in international relations and security analysts. And since each of these phenomena belongs to a completely separate realm of society, no one has ever thought of relating them in the first place.¹⁸

And yet, as it turns out, these phenomena are not simply related. In fact, they could be thought of as two sides of the very same process – namely, the *global accumulation of capital as power*.

We started to study this subject when we were still graduate students, back in the late 1980s, and we have published quite a bit about it since then. This research opened our eyes, first, to the encompassing nature of capital; and, second, to the insight that one can gain from analyzing its accumulation as a power process.

Notice the three remarkable relationships depicted in the chart. First, every energy conflict was preceded by the large oil companies trailing the average. In other words, for an energy conflict to erupt, the oil companies first had to *decumulate* differentially – a most unusual prerequisite from the viewpoint of any social science.

Second, every energy conflict was followed by the oil companies beating the average. In other words, war and conflict in the region, which social scientists customarily blame for ‘distorting’ the aggregate economy, have served the differential interest of certain key firms at the expense of other key firms.

Third and finally, with one exception, in 1996-7, the oil companies never managed to beat the average without there first being an energy conflict in the region. In other words, the differential performance of the oil companies depended not on production, but on the most extreme form of sabotage: war.

Needless to say, these relationships, and the conclusions they give rise to, are nothing short of remarkable. First, the likelihood that all three patterns are the consequence of statistical fluke is negligible. In other words, there must be something very substantive behind the connection of Middle East wars and global differential profits.

Second, these relationships seamlessly fuse quality and quantity. In our research on the subject, we show how the qualitative aspects of international relations, superpower confrontation, regional conflicts and the activity of the oil companies on the one hand, can both explain and be explained by the quantitative global process of capital accumulation on the other.

¹⁸ For detailed critiques of existing studies on these subjects, see [Bichler, Rowley and Nitzan \(1989\)](#), [Rowley, Bichler and Nitzan \(1989\)](#), [Nitzan and Bichler \(1995\)](#), [Bichler and Nitzan \(1996\)](#) and [Nitzan and Bichler \(2005\)](#).

Third, all three relationships have remained stable for half a century, allowing us to predict, in writing and before the events, both the first and second Gulf Wars.¹⁹ This stability suggests that the patterns of capital as power – although subject to historical change from within society – are anything but haphazard.

Toward a new cosmology of capitalism

This type of research gradually led us to the conclusion that political economy requires a fresh start. At about the same time, in 1991, Paul Sweezy, one of the greatest American Marxists, wrote a piece that reassessed *Monopoly Capital* (1966), a deservedly famous book that he wrote together with Paul Baran twenty-five years earlier. In that piece, Sweezy admitted that there is something very big missing from the Marxist and neoclassical frameworks: *a coherent theory of capital accumulation*. His observations are worth quoting at some length because they show both the problem and why economics cannot solve it:

Why did Monopoly Capital fail to anticipate the changes in the structure and functioning of the system that have taken place in the last twenty-five years? Basically, I think the answer is that its *conceptualization of the capital accumulation process is one-sided and incomplete*. In the established tradition of both mainstream and Marxian economics, we treated capital accumulation as being essentially a matter of adding to the stock of existing capital goods. But in reality this is only one aspect of the process. Accumulation is also a matter of adding to the stock of financial assets. The two aspects are of course interrelated, but the nature of this interrelation is problematic to say the least. The traditional way of handling the problem has been in effect to assume it away: for example, buying stocks and bonds (two of the simpler forms of financial assets) is assumed to be merely an indirect way of buying real capital goods. This is hardly ever true, and it can be totally misleading. This is not the place to try to point the way to a more satisfactory conceptualization of the capital accumulation process. It is at best an extremely complicated and difficult problem, and I am frank to say that I have no clues to its solution. But I can say with some confidence that achieving a better understanding of the monopoly capitalist society of today will be possible only on the basis of a more adequate theory of capital accumulation, with special emphasis on the interaction of its real and financial aspects, than we now possess. (Sweezy 1991, emphases added)

The stumbling block lies right at the end of the paragraph: ‘the interaction between the real and financial aspects’. Sweezy recognized that the problem concerns the very concept of capital – yet he could not solve the problem precisely because he continued to bifurcate capital into its ‘real’ and ‘financial’ aspects. And that should not surprise us. Sweezy and his *Monthly Review* group had pushed the frontier of Marxist research for much of the post-war period, but as children of their time they could not jump over Rhodes. By the 1990s their ammunition had run out. They recognized the all-imposing reality of finance, but their bifurcated world could not properly accommodate it.

¹⁹ The first Gulf War (1990-91) was predicted in [Bichler, Rowley and Nitzan \(1989: Section 2.3\)](#). The second Gulf War (2002-3) was predicted in [Bichler and Nitzan \(1996: Section 8: Toward a New Energy Conflict?\)](#).

As younger researchers socialized in a different world, we did not carry the same theoretical baggage. Uninhibited, we applied the Cartesian Ctrl-Alt-Del and started by assuming that there is no bifurcation to begin with and therefore no real-financial interaction to explain. All capital is finance and only finance, and it exists as finance because accumulation represents not the material amalgamation of utility or labour, but the continuous *creordering* of power.

To challenge capitalism is to alter and eventually abolish the way it *creorders* power. But in order to do so effectively, we need to comprehend exactly what it is that we challenge. Power, we argue, is not an external factor that distorts or supports a material process of accumulation; instead, it is the *inner* driving force, the means and ends of capitalist development at large. From this viewpoint, capitalism is best understood and contested not as a mode of consumption and production, but as a mode of power. Perhaps this understanding of what our society is could help us make it what we want it to be.

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A warrant for pain:

Caveat emptor vs. the duty of care in American medicine, c. 1970-2010¹

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Abstract

Bad ethics can make for bad economic outcomes. Bad ethics are defined hedonically as the infliction of pain on others for private advantage. The infliction of pain is often justified by 'Just World Theories', which state that everyone gets what they deserve. Market liberalism (and its theoretical underpinning in neoclassical economics) is one theory of this kind. As an example, the micro and macro underperformance of the American health system c. 1970-2010 is explained in terms of the shift in policy norms from the fiduciary norm "first do no harm" to the neo-liberal market norm of "let the buyer beware" (*caveat emptor*) since the 1970s.

The doctrines of economics are indifferent to ethics. This may be disquieting, but it is not easy to pin down what might be wrong about it, and to show that it is harmful. The unfolding financial crisis has left a sense of moral unease, a concern that ethical transgression might be undermining the orderly working of markets. The drift of the American health care system towards market norms, described below, shows more clearly how bad ethics can lead to inferior economic outcomes.

Part I

Ethics aspires to the Good, but the Good is not easy to identify. Plausible arguments are made for principles which are incompatible with each other. Both Freedom and Justice are compelling, for example, but the two principles are not easy to reconcile. A concept from social psychology may help: it is 'Just World Theory'.² The basic idea is simple: a 'Just World Theory' says that everyone gets what they deserve. If the Inquisition burned heretics, that was only what they deserved. If Kulaks were starved and exiled in Soviet Russia, they only got what they deserved. Likewise the Nazis and the Jews. Just World Theories are ubiquitous. The criteria are political, religious, ethnic, gendered, and cultural. They justify the infliction of pain. Classical Liberalism is also a 'Just-World Theory' of this kind. Milton Friedman wrote, 'The ethical principle that would directly justify the distribution of income in a free market society is, "To each according to what he and the instruments he owns produces."' In other words, everyone gets what they deserve.³ The norm of individual freedom justifies the inequalities of market society.

If there cannot be agreement about the Good, perhaps some can be reached over the Bad? To achieve broad consent, the Bad needs to be defined tightly. One such approach would be a narrowly hedonic one that focused exclusively on the harms of pain and death. Physical pain is not good. It provides a warning signal, but otherwise there is little to be said for it. Likewise death is sometimes sought out by individuals for themselves as being the lesser Bad, but has few other mitigations.

¹ A companion piece to follow Offer, 'Self-Interest, Sympathy and the Invisible Hand'.

² Rubin and Peplau, 'Who Believes in a Just World?'; Lerner and Miller, 'Just World Research and Attribution Process'; Lerner, *The Belief in a Just World*. In social psychology the 'theory' is informal and attributed to individuals. Here it is applied to social and political doctrines.

³ Friedman, *Capitalism and Freedom*, 161-2.

I propose an ethical criterion of 'Warranted Pain'. The criterion is: 'No infliction of unwarranted pain or death'. Who would wish to argue the opposite? The infliction of pain or even death is not forbidden by this criterion, but it requires a satisfactory warrant. Pain or death need to be justified. That focuses the argument onto the quality of the warrant. What benefits can justify the infliction of pain or death? How much good can it deliver, and to whom? The principle is not absolute: but it narrows the scope for disagreement. And once the warrant is on the table, we can reach for our ethical intuitions.

For example for the purpose of cost-benefit analysis of regulation, a life is evaluated at about \$6 million. This figure is normally arrived at by capitalising the premium required for risky occupations, where the risks are known. If the cost of a protective measure is more than \$6 million per life saved, then it will not be implemented. This may be a warrant for somebody's death. But is it a good warrant? To begin with, it assumes identical risk preferences, but the vast majority of workers actually turn down the deals on which this figure is based. Those who accept them are likely to be atypical, both in their appetite for risk, and their economic circumstances. So their lives may be undervalued. The second point is that this figure is not the value of a particular life, but a costing of the risk. It would be the aggregate of 6 million people paying a dollar each to avoid a 1/6-millionth chance of death. People are paid a premium to take on a risk, not to die. A single, particular life is unpriceable. You cannot pay somebody \$6 million dollars for permission to kill them. Furthermore, in a market economy, those who take on the risk, rarely get the benefits. If the repeal of a costly regulation benefits 'the economy', those exposed to the risk are worse off, and those who were previously regulated are better off. Not society 'as a whole'.

The corporate demand for relief from regulation increases death and injury for workers.⁴ How much pain and death does laissez-faire warrant? And the gain goes to whom? Instead of the supposed value of market and individual freedoms, we can focus on more precise metrics: does privatisation actually increase productivity, who stands to benefit, and can the gain for shareholders and managers justify disease and death for consumers and workers? If the price of competition is inequality, are the benefits worth an expanding gap in life expectation, even if on average, all classes benefit? Or if more gain at the bottom could be had for less at the top? And what if only a few benefit? And if productivity does not actually increase?

There is no simple algorithm for such questions, so this is the point where ethical intuitions can enter. Agreement may still be elusive, but the issues and metrics provide a sharper focus, and show how to make and defend an ethical judgement. In policy, the criterion of warranted pain implies that a bad ethical call has a cost in the currencies of pain and death. And if economic output is all you care for, then pain and death, even of others (as we shall see), can diminish productivity and welfare. The criterion appears to be narrow, but it can do a lot with a little, not only in ethics, but also in policy.

In science, the test of a theory is what grounds it gives for belief ('justification'). A rough and ready test is how well the model fits with experienced reality. When used to derive policy, an economic model not only describes the world, but aspires to change it. For example, the market-liberal model of 'rational expectations' implies that benign government interventions will be anticipated and thwarted, and are therefore futile. If the model is wrong however, then a policy of non-intervention can well be harmful. In policy, if the model is bad, then reality has to be forcibly aligned with it by means of coercion. How much coercion is actually used provides a rough measure of a model's validity.

⁴ Tombs and Whyte, *Regulatory Surrender: Death, Injury and the Non-enforcement of Law*.

Coercion is a feature of societies that rest on strong Just World doctrines. Such societies have resorted to witch-hunts, secret police, concentration camps and worse. Classical liberalism and its offspring, neo-classical economics, are also such Just World Theories. They accept as legitimate any existing endowments and property rights, and they endorse the market distribution of final rewards. Market-liberal societies make Just-World claims, and also inflict a great deal of coercion, pain, and death. The United States is the most market-oriented of affluent societies, and also leads the developed world, and much of the rest, in the size and severity of its penal system. It continues to inflict the death penalty. It denies secure healthcare to one-sixth of its population, and tolerates hundreds of millions of firearms in private possession. It has troops all over the globe, and uses them readily. It leads the developed world in the proportion of supervisory and coercive 'guard labour'.⁵ More than a million people have been killed by guns in the United States since 1968, and more than two million were in prison at any one time during the last decade. How much pain is warranted has been discussed literally with regard to the torture of terrorist suspects, in both the USA and apparently in the UK, and some of it has been found to be acceptable.⁶ All this without considering pervasive incidence of poverty, hunger, illness, and early death arising at the lower end of society as a consequence of labour market inequalities and social neglect. Lower income people even suffer pain more frequently than those of higher income.⁷ These costs can be measured against the tangible and intangible benefits of 'economic freedom', such as they are, and such as it is.

Part II

The abstractions of ethics come to life in the recent record of health care in the United States. Some ill-health is unavoidable. It exposes everyone to suffering and ultimately to death. Ill-health is a state of dependence on the knowledge and goodwill of others. The entitlements of patients are affected by an enduring tension, between two principles which are as old as economics, on the one side, the individualist principle of 'me-first', on the other the social norm of looking after those who cannot fend for themselves.⁸ If the baker serves up stale bread, we may be able to go elsewhere. But the patient cannot be sure how well he is being treated. His suffering is an urgent matter, while for the doctor, however compassionate, it is all in a day's work. The nurse and the doctor have vital knowledge which is too extensive to convey to the patient. When it comes to payment, the patient's predicament means that doctors can drive a hard bargain. Even a patient who is robustly self-centred himself, does not like to think that those who treat him are in it only for themselves. Nor would any healer wish to convey that impression. But the patient cannot rely entirely on compassion. He hopes that the doctor is also mentally disciplined and morally robust, that she has a sense of duty to the patient and to scientific truth, that she was licensed by impartial assessors, and that the knowledge she uses has been validated by disinterested experts.⁹

In his *Theory of Moral Sentiments* Adam Smith's describes the mechanism of ethical validation. The 'impartial spectator' (an inner voice of conscience) is driven by the desire for social approbation, to 'do the right thing'.¹⁰ Even if the doctor cares but little for any particular patient, we trust that she is disciplined by the judgement of her peers. The norm of impartial

⁵ Bowles and Jayadev, 'The Enforcement-Equality Trade-Off'.

⁶ Cole, 'They did Authorize Torture, but...'

⁷ Krueger and Stone, 'Assessment of Pain'; Stone et al., 'The Socioeconomic Gradient'.

⁸ Offer, 'Self-interest, Sympathy and the Invisible Hand'; Force, *Self Interest before Adam Smith*.

⁹ The doctor is female and the patient male for clarity of exposition.

¹⁰ Offer, 'Self-interest, Sympathy and the Invisible Hand'.

sympathy is codified as a fiduciary duty, a duty of care, whose first principle is 'do no harm'. Obligations are spelled out in professional codes of practice, backed by the sanction of exclusion, and enforced by the state. These codes can be taken to formalise the norms that the impartial spectator would have us internalise. They restrict the room for discretion, and commit practitioners to the client's interest.¹¹

The ethical code of practice binds the profession to refrain from abusing power. The commitment to do no harm has made it easier for society to grant a monopoly of medical practice to certified doctors.¹² Another token of this deal is tax-exempt status for medical schools and teaching hospitals. In return for this power, the healing professions used to promise, implicitly, not to abuse it: 'The organizational culture of medicine used to be dominated by the ideal of professionalism and voluntarism, which softened the underlying acquisitive activity.'¹³ The deal with the state assumes that both sides are acting in good faith. The provider takes responsibility for the treatment and for its consequences.

Market liberals do not believe in the good faith of either doctors or the state. Their solution to the problem of unequal power is to 'let the buyer beware' (*caveat emptor*). The duty of care is laid on the patient, with little regard for his ignorance of the relevant information. The standard assumption in market liberalism is that people are well-informed, and they are at fault if they are not (in the extreme Chicago version, they know everything at no cost). The vendor has a duty only to himself. It is the credo of the strong. As for the others, let the buyer beware.

American anti-trust legislation began in the late 19th century in order to bring more fairness into market competition, as an aspect of the broader Progressive movement. But market advocates after the Second World War (a different group, and hostile to the historical Progressives) cared little about monopoly.¹⁴ Chicago economists are averse to anti-trust.¹⁵ As a rule, however, their partiality to market power does not extend to workers.¹⁶ The Chicago argument is that corporate monopolies, unlike unions, can be challenged by new entrants. The licensing monopoly of the medical profession has also attracted the ire of Chicago. Milton Friedman advocated free entry into medical practice, with the onus of diligence transferred to the patients.¹⁷ These views gained currency with the rise of market liberal influence during the 1970s. In *Goldfarb vs. Virginia State Bar* (1975), the United States Supreme Court handed down a judgment that the ethical codes of professional associations were not immune to anti-trust. The case concerned the legal profession, but doctors embraced it too, and their associations accordingly relaxed the anti-competitive elements in their codes.¹⁸ Fees were quick to follow: American doctors are the best paid in the world by far.¹⁹ Competition was not enhanced: the medical professions continued to control education, certification, standards, and numbers. But the duty of care was relaxed. Pricing power was given to impersonal commercial entities, insurance companies that only acted, as Friedman has advocated, in their own interest. In a market where prices are set by corporations, there is little room for

¹¹ Rayner, 'Integrity in Surgical Life'.

¹² Arrow, 'Uncertainty and the Welfare Economics of Medical Care'.

¹³ Starr, *Social Transformation of American Medicine*, 448.

¹⁴ Van Horn, 'Reinventing Monopoly and the Role of Corporations'; Bork, *The Antitrust Paradox*.

¹⁵ Pitofsky, *How the Chicago School Overshot the Mark*; White, 'The Growing Influence of Economics and Economists on Antitrust'. Henry Simons was the last major Chicago economist to advocate anti-trust.

¹⁶ Friedman, *Capitalism and Freedom*, ch. 8.

¹⁷ Friedman, *Capitalism and Freedom*, ch. 9.

¹⁸ Relman, 'What Market Values Are Doing to Medicine'; Relman, *A Second Opinion: Rescuing America's Health Care*, ch. 1.

¹⁹ Laugesen and Glied, 'Higher Fees Paid to US Physicians Drive Higher Spending for Physician Services'.

obligation or a duty of care. At the point of contact with the patient, however, the unpriceability of human life kicks in, but provides an incentive for indulgent and sometimes futile overtreatment.²⁰ Doctors and hospitals had financial incentives to treat expansively with little regard for cost. The insurance company's incentive was to maximise net revenue. Unlike the doctors, however, insurance providers retained their immunity from anti-trust, and many of them came to dominate their territories.²¹ In consequence, healthcare providers increasingly charged as much as the patient could bear, and often more than that.

Part III

Increasingly, knowledge in healthcare is embodied in drugs and other medical technology. Doctors have to take drug value on trust, but the vendors have no other duty than to maximise their profits. Drug making is among the most profitable industries in the United States. By the end of the 1990s the ten Fortune 500 drug companies had profits about four times as high as the median corporation, and between 2006 and 2009 the industry was typically the second or third most profitable one in the USA, with profits at between 16 and 19 percent of revenues.²² This was not the work of the invisible hand, but of monopoly patents. Drug prices are much higher in the United States, with its policy norm of 'free markets', than in the variously socialised medical systems of other countries. When the United States Senate created a Medicare drug benefit for seniors, it specified that the government would not use its buying power to negotiate prices. Such was the political heft of Big Pharma. In the recent Congressional debates on healthcare in the United States, the statements of more than a dozen lawmakers were ghost written, in whole or in part, by lobbyists working for Genentech, a large biotechnology company. One statement was prepared for Democrats and another for Republicans. The company, a subsidiary of the Swiss company Roche, estimated that forty-two house members used some of its talking points. Several different statements in the *Congressional Record* matched each other word for word. The boilerplate that appears in the *Congressional Record* even included some conversational touches, as if actually delivered on the congressional floor. A lobbyist close to the company said 'this happens all the time. There's nothing nefarious about it.'²³ One Senator, who has acted successfully to protect health-addictive companies from scrutiny of general health claims (of the sort made by patent medicines) has been richly rewarded with financial contributions.²⁴

In the United States, drug companies deploy consumer advertising to nudge patients into asking for particular drugs, and also perhaps to reassure the doctors.²⁵ But this reassurance is often misplaced. A top medical journal editor has written, "'Caveat emptor' may be a reasonable approach for many consumer products, but not for prescription drugs".²⁶ Expensive prescription drugs are often little or no better than generic ones, or than over-the-counter remedies. The rheumatism painkiller Vioxx had few clear advantages over aspirin, but made profits for its producer Merck. Evidence began to emerge that it raised the risk of stroke

²⁰ Gawande, 'Letting Go'.

²¹ American Medical Association, *Competition in Health Insurance*.

²² Public Citizen's Congress Watch, *2002 Drug Industry Profits*, fig. 5; CNN Money and *Fortune*, Fortune 500, 'Top Industries: Most Profitable', 2006-2009. It was fifth in 2006.

²³ Pear, 'In House, Many Spoke With One Voice: Lobbyists'.

²⁴ Lipton, 'Support Is Mutual for Senator and Makers of Supplements'.

²⁵ Hightower, 'The Great American Medicine Show'.

²⁶ Angell, 'Your Dangerous Drugstore', 7.

and heart disease. When the company became aware of those risks, it did not rush to disclose them, and fought to prevent the drug from being banned.²⁷

The approval procedure administered by the Federal Drug Administration (FDA) in the United States is no longer slow and thorough, and provides only a flimsy defence for patients. Since the early 1990s, the FDA has been half-funded by drug company 'user fees'.²⁸ It evaluates drugs partly on the basis of tests submitted to it by the producers. Experts with financial ties to the companies sit on drug approval boards, where it is not uncommon for them to be in the majority. They can look forward to consultancy and speaking fees. The trials are often poorly designed, and investigators frequently fail to report their links with the industry.²⁹ The figures are dressed up to favour the drugs, and trials are often carried out by investigators with a financial interest in the outcome. Some of the tests are even fraudulent. The standard of efficacy required is low: merely better than placebo. Negative findings tend to be suppressed, and approval not always retracted. The majority of new drugs are variations on old ones, and the industry produces a regular flow of products that are unsafe and ineffective.³⁰ The drug companies have teams of ghostwriters who write up the research for publication under the names of academic investigators. A study found that 10.9 percent of articles in the *New England Journal of Medicine* were ghost written in this way, 7.9 percent of articles in the *Journal of the American Medical Association*, and 7.6 percent in *The Lancet*.³¹ In psychiatry, enterprising doctors seek to define new disorders which are treatable by drugs. Ordinary social attributes, like shyness or sadness, increasingly become medicalized.³² Richard Horton, editor of *The Lancet*, has defended non-disclosure of conflict-of-interest, on grounds that it has become impossible to prevent. He preferred the term 'dual commitment'. This position was contested by the editor of the *British Medical Journal*.³³ Marcia Angell, for two decades the editor-in-chief of the top medical journal in the United States, *The New England Journal of Medicine*, has written that 'It is simply no longer possible to believe much of the clinical research that is published, or to rely on the judgement of trusted physicians or authoritative medical guidelines. I take no pleasure in this conclusion, which I reached slowly and reluctantly over my two decades as an editor.'³⁴ In response to public criticism, journals and medical schools are beginning to respond, but slowly: few universities impose a cap on how much a faculty member can be paid by those who make a product they are investigating.³⁵

Top doctors get large kickbacks. Ordinary ones benefit too.³⁶ The companies lay out hospitality at symposia and conferences, often at distant and attractive locations.³⁷ 'Marketing and administration' is by far the largest cost of drug production. Salesmen press drugs and procedures aggressively, and push them for off-label prescription i.e. for purposes for which they are not tested. There is large divergence in levels of medical costs across United States, with areas in the South tending to prescribe, test, and treat more heavily than in other parts of the country, often at the expense of Medicare. Doctors prescribe tests from labs which they

²⁷ Ibid.

²⁸ Angell, *Truth about the Drug Companies*, 208-11.

²⁹ Angell, *The Truth about the Drug Companies*.

³⁰ Light, *The Risk of Prescription Drugs*; FDA, 'FDA Notifies Pharmaceutical Companies'; Rosenberg, 'Why Have Medical Journals Not Retracted These Fraudulent Articles?'

³¹ Wilson and Singer, 'Ghostwriting is Called Rife in Medical Journals'; Singer, 'Senator Moves to Stop Scientific Ghostwriting'; US Senate Committee on Finance, 'Ghostwriting in Medical Literature'.

³² Healey, *Antidepressant Era*; Lane, *Shyness: How Normal Behavior became an Illness*.

³³ Horton, 'Conflicts of Interest in Clinical Research'; Smith, 'Conflict of Interest'.

³⁴ Angell, 'Drug Companies and Doctors: a Story of Corruption'. Also Healy, *Pharmageddon*.

³⁵ Wilson, 'A Tougher Conflict Policy at Harvard Medical School'.

³⁶ Kassirer, *On the Take*; Nguyen et al., 'Dollars for Docs'; Healy, *Pharmageddon*.

³⁷ Nguyen, 'Dollars for Doctors'; Pear, 'U.S. to Force Drug Firms to Report Money Paid to Doctors'.

own. In the medical economy where every service is provided as a commodity, fraud is rife, and antifraud control is also outsourced to private contractors.³⁸ Drug companies heavily overcharge public health systems.³⁹ A home care company submits false claims to the federal government.⁴⁰ Media and journal sources (which pick up these abuses) depict the medical market as a war of all against all (which is what a competitive market is meant to be, although cheating is left out of the model). Every relationship offers opportunities for deceit: insurance companies and doctors discriminate against different classes of patients, patients resell medicare drugs, doctors overcharge insurance companies and insurance companies undercompensate doctors.⁴¹ Fraudulent billings alone are estimated by the FBI to cost between three and ten percent of total health expenditures, or approximately 0.5-1.7 percent of national income. Healthcare is a “criminogenic” industry.⁴²

Adam Smith’s norms of sympathy, approbation, reciprocity, and virtue might have protected the integrity of medical treatment and of medical research, if they were not challenged so forcibly by the policy norm of *caveat emptor*.⁴³ At the point of delivery, healthcare is not a commodity trading impersonally, but is mediated by personal interaction. However, what matters is not compassion, but integrity – the impartial spectator’s injunction to do the right thing. Medicine is a vast enterprise, in which everyone has to trust that knowledge is created, validated, and used impartially, and in the interests of the patient. If the authority of scientists and doctors can be purchased by interested parties, its quality is no longer secure. Caveat emptor applies. Opportunistic professionals are tempted to cash in the reputation for probity of which they are the transient custodians. The word liquidation has two meanings: destruction, and converting an asset into money. Opportunistic doctors have been doing both: appropriating for their private gain the authority built up by generations of scientists and doctors, and leaving it diminished after they are gone. This ethic of opportunism is pervasive.⁴⁴ More medical doctors think like entrepreneurs, and seek to qualify as MBAs.⁴⁵ In return for immediate gain, they sacrifice present and future patients, and undermine the work of more selfless colleagues. They are able to exploit a position of authority and knowledge to dismantle the safeguards of knowledge and authority, for what they see as own immediate advantage.

Part IV

It is not only individuals who were placed at risk. The cost of health care in the United States has risen to a level which threatens macroeconomic stability. Health care costs (at around 17% of GDP) are almost twice as high per head as in comparable countries (figure 1). These expenditures are creating havoc in public expenditures, and dragging down employers, who provide most health insurance. And yet healthcare outcomes (on average) are the worst among the top seven countries (table 1).

³⁸ Gawande, ‘The Cost Conundrum’; Dartmouth Atlas Working Group, ‘The Dartmouth Atlas of Healthcare’; Forden, ‘Why Medicare Can’t Catch the Fraudsters’; Leap, *Phantom Billing, Fake Prescriptions, And the High Cost of Medicine*.

³⁹ Pope and Selten, ‘Public Debt Tipping Point Studies’, 19-22.

⁴⁰ Lefcourt, ‘A Corporate “Culture of Fraud”’.

⁴¹ Rashbaum, ‘A \$250 Million Fraud Scheme’, and reader comments; Smith, ‘Are Cheating Doctors Running Bill Scams’; Terhune, ‘Many Hospitals, Doctors Offer Cash Discount For Medical Bills’; Pear, ‘Report on Medicare Cites Prescription Drug Abuse’.

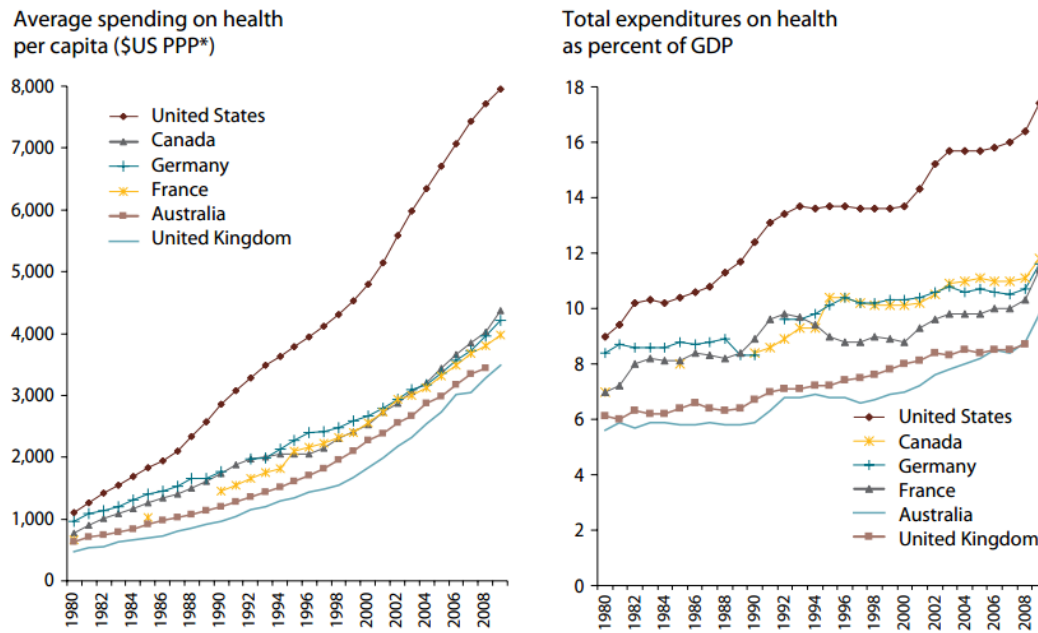
⁴² Leap, *Phantom Billing*, ix, 3, 11.

⁴³ Offer, ‘Self-interest, Sympathy and the Invisible Hand’.

⁴⁴ Washington, ‘Flacking for Big Pharma’.

⁴⁵ Freudnehim, ‘Adjusting, More M.D.’s Add M.B.A.’.

Figure 1. International Comparisons of Spending on Health, 1980-2009.



Source: Commonwealth Fund, *Why Not the Best? Results from the National Scorecard on U.S. Health System Performance, 2011* (New York: Commonwealth Fund, 2011), exhibit 3, 20. Based on OECD Health database.

Table 1. Overall Ranking of Healthcare Performance.

| | AUS | CAN | GER | NETH | NZ | UK | US |
|----------------------------------|--------|--------|--------|--------|--------|--------|--------|
| OVERALL RANKING (2010) | 3 | 6 | 4 | 1 | 5 | 2 | 7 |
| Quality Care | 4 | 7 | 5 | 2 | 1 | 3 | 6 |
| Effective Care | 2 | 7 | 6 | 3 | 5 | 1 | 4 |
| Safe Care | 6 | 5 | 3 | 1 | 4 | 2 | 7 |
| Coordinated Care | 4 | 5 | 7 | 2 | 1 | 3 | 6 |
| Patient-Centred Care | 2 | 5 | 3 | 6 | 1 | 7 | 4 |
| Access | 6.5 | 5 | 3 | 1 | 4 | 2 | 6.5 |
| Cost-Related Problem | 6 | 3.5 | 3.5 | 2 | 5 | 1 | 7 |
| Timeliness | 6 | 7 | 2 | 1 | 3 | 4 | 5 |
| Efficiency | 2 | 6 | 5 | 3 | 4 | 1 | 7 |
| Equity | 4 | 5 | 3 | 1 | 6 | 2 | 7 |
| Long, Healthy, Productive Lives | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Health Expenditures/Capita, 2007 | \$3357 | \$3895 | \$3588 | \$3837 | \$2454 | \$2992 | \$7290 |
| Rankings 1-2.33 | | | | | | | |
| Rankings 2-34-4.66 | | | | | | | |
| Rankings 4.67-7 | | | | | | | |

Source: Davis et al., *Mirror, Mirror on the Wall: How the Performance of US Health Care System Compares Internationally, 2010 Update* (New York: Commonwealth Fund, 2010), Exhibit ES-1, v.

A study of mortality reduction in seventeen countries over twenty-five years to 2005 found the United States to have the highest health expenditure per head, and the also the highest mortality rate. It ranked seventeenth in the ratio of expenditure to lives saved, and 11th in the rate of reduced deaths.⁴⁶

Standards of treatment are good, but many people cannot access them. The proportion of uninsured during the last three decades has been typically higher than 15% of the population. It currently stands at almost 17%, or more than 50 million people.⁴⁷ Many more are underinsured. In 2010, more than 81 million working age adults, 44 percent of those between the ages of 19 to 64, were uninsured or underinsured during the year. In the economic downturn, nine million working-age adults lost their health coverage together with their jobs.⁴⁸ Medical insurers deny cover for millions with pre-existing conditions.⁴⁹ 45,000 excess deaths a year were recently attributed to the absence of medical insurance, comparable to c. 33,000 deaths on the roads.⁵⁰ As many as 91,000 fewer people would die prematurely if the US could achieve the leading country's rate in terms of healthcare. The US ranks last among 16 industrialised countries for preventable death.⁵¹ For those without insurance, or with insufficient coverage, a major illness was an economic calamity. Personal bankruptcy in the United States has risen sharply in the last three decades. In 2001, about 1.5 million experienced bankruptcy, more, for example, than heart disease or divorce.⁵² Medical costs were implicated in half to two-thirds of all cases of personal bankruptcy.⁵³ Some couples who would otherwise divorce chose to stay together to benefit from medical coverage, while others separated to protect a partner from medical costs. But assets of divorced spouses can still be seized for medical expenses five years after the break.⁵⁴ To keep their health coverage, people stayed in jobs they disliked.

The conflict between the care ethic and the market ethic is exposed in the efforts to make the underinsured pay for their treatment. An entitlement to hospital emergency room attention is the US medical system's ultimate safety net; it is a statutory expression of the duty of care. In law however, it is restricted to the relief of symptoms. But emergency room hospitals still demand payment for treatment, and sign up patients on high-interest credit cards in order to collect their fees. These obligations are pursued, and are ultimately sold at a discount to financial companies. 'If you go to a veterinarian, you have to pay, one health-care executive notes. Why should a hospital be different?'⁵⁵ Patients with assets can have them seized; those without, can lose their credit ratings, and their ability to borrow for a car or a house.⁵⁶ This is consistent with the norms of profit-making hospitals, but has caused some heart-searching among nonprofits. 'In a lucrative new form of fiscal alchemy...a growing number of hospitals, working with a range of financial companies, are squeezing revenue from patients with little or no health insurance.' Some non-profits were relaxed about charging patients a high rate of interest, but others were uneasy. One medical administrator in Memphis said, 'If we heal somebody medically, but we break them financially, have we really done what is in

⁴⁶ Pritchard and Wallace, 'Comparing the USA, UK and 17 Western Countries'.

⁴⁷ U.S. Census Bureau, *Income, Poverty, and Health Insurance Coverage in the United States: 2009*.

⁴⁸ Commonwealth Fund, *Why Not the Best*, 9.

⁴⁹ Potter, 'Health Insurance Exec Speaks'.

⁵⁰ Wilper et al., 'Health Insurance and Mortality in US Adults'.

⁵¹ Commonwealth, *Why not the Best?* 9, 43.

⁵² Warren and Tyagi, *Two-Income Trap*, 80-5; Offer, *Challenge of Affluence*, 293-4;

⁵³ Himmelstein, 'Medical Bankruptcy in United States'.

⁵⁴ Kristof, 'Until Medical Bills Do Us Part'; Smartmoney, 'Unhappily Ever after: the 'Nondivorce'.

⁵⁵ Grow and Berner, 'Fresh Pain for the Uninsured'.

⁵⁶ Harney, 'Debts that Unsettle the Score'.

the best interest of the patient?’⁵⁷ Debt collection companies have stationed agents in emergency rooms and hospital departments to get patients to pay before treatment, and have gained illegal access to personal health records.⁵⁸

A software program widely used in hospitals (‘Conifer’) works out how to maximize cost extraction from indigent patients. “‘One of our main values is to take care of the poor and vulnerable,’ says Mary Jo Gregory, chief operating officer of Sisters of Charity of Leavenworth Health System, which operates 11 hospitals west of the Mississippi and is using Conifer software. ‘How do you fulfil that role and still have a sustainable ministry? Our bad debt is high, and we’re facing the same issues as everyone else in terms of collections.’”⁵⁹ The cases described are heart-breaking: pain and death galore. Profits are not as high in health insurance as they are in drug manufacturing. Instead, as in other industries, the surplus is appropriated by the managers.⁶⁰ Managers of non-profits also rake it in.⁶¹ Physician-managed hospitals had higher outcome quality scores than those run by managers.⁶²

The Obama healthcare reform has given priority to the ethical issue, the denial of medical care, while setting aside the economic one of unsustainably rising costs. The actual form of the Health Care Act is an unwieldy compromise. It has left intact the commercial profit-seeking framework of healthcare provision, protecting insurance company profits and medical overtreatment. In order to achieve its ethical objective of extending healthcare to all, it has resorted to a moderate form of compulsion, and has extended eligibility for subsidized programs. The Act only went through because it did nothing to threaten the revenues of insurance companies and health providers. It became the focus of political unrest, most notably by the so-called Tea Party movement. Inconsistently, these protesters oppose the reduction in Medicare benefits for the old, while objecting to the fiscal cost of extending coverage to other people. In its continued support for Medicare, the Tea Party movement embodies the tension between the ‘me-first’ ideology that is pervasive in United States, and the contrary intuition that care for the ill is an obligation and entitlement.

It is revealing to discuss market efficiency in terms of these external costs of pain and death. In the UK, there is more than a decade’s difference in life expectation between people at the two ends of socio-economic scale, a gap wider than at any time since 1921.⁶³ The prevalence of obesity is much higher in the cluster of English-speaking market liberal economies. Statistically, the most important driver appears to be the extent of economic insecurity, and that is affected by the risk of incurring high private medical costs.⁶⁴ Obesity is an important risk factor for disease and early death. Economic insecurity has risen sharply in United States during the last three decades.⁶⁵ There is a trade-off, then, between opportunity for some and pain and death for others. A market in healthcare is consistent with higher cost and worse outcomes. Even in theory, markets only work if participants are well-informed. That is not the case for health, and indeed, not the case for a great many other purchases, either because information is not readily available, or because it will only be revealed in the future.

⁵⁷ Grow and Berner, ‘Fresh Pain for the Uninsured’.

⁵⁸ Greenberg, ‘Debt Collector Is Faulted for Tough Tactics in Hospitals’. There is rich further testimony in 1159 readers’ comments, the majority indignant, a minority supporting the practices.

⁵⁹ Olmos, ‘Getting Patients to Pay before They Go Home’, 22-3.

⁶⁰ Strauss, ‘Outgoing Aetna Chairman gets a \$68.7 million Goodbye’.

⁶¹ Buettner, ‘Reaping Millions From Medicaid in Nonprofit Care for Disabled’.

⁶² Goodall, ‘Physician-leaders and Hospital Performance’.

⁶³ Thomas et al., ‘Inequalities in Premature Mortality in Britain’, c3639.

⁶⁴ Offer et al., ‘Obesity under Affluence Varies by Welfare Regimes’.

⁶⁵ Hacker et al., *Economic Security at Risk*.

We began with the financial crisis. For doctors, write bankers. Do bankers have a duty of care for anything except their private gain? Pain or death are not so directly at stake here, so the issue may not be so clear-cut. But when bankers are bailed out by taxpayers, the pursuit of self-interest affects the access of others to necessities like housing, education, job security, pensions, and healthcare. From the point of view of high finance, its transactions are impersonal. But the marketing departments of retail banking strive to convey the impression of a caring relationship, and the purchase of financial products typically involves a face-to-face interview. The existence of face-to-face interaction, suggests that it would be appropriate to apply the reciprocal norms of the impartial spectator to this type of interaction. Consequently, this aspect of retail banking makes it tempting for reformers to impose a duty of care on bankers, on pain of expulsion. Ed Miliband, current leader of the Labour Party has proposed a duty on bankers of this kind, explicitly modelled on the medical one.⁶⁶ But what the medical analogy really shows, is that neither an interpersonal relationship, nor a strict code of professional practice are sufficient. Even in medicine, where the norm of care is so powerful, it is inadequate to counteract the ravages of market forces. What is needed in this area of personal service for the duty of care to be effective, is an explicit rejection of the norm of *caveat emptor*, of the license to exploit counterparty ignorance. Even Milton Friedman stressed that an economic exchange is advantageous to both sides, only '*provided the transaction is bi-laterally voluntary and informed*'.⁶⁷ If we want to follow Adam Smith, his teaching requires a modicum of virtue on the part of bankers, both individually and in their corporate capacity. The less-demanding 'economy of regard' requires that whatever their real motives, bankers should be able to send an authentic signal, and not a fake one, that they respect their clients' interests, and do not feel entitled to cheat them.⁶⁸ For the signal to be authentic, they must genuinely place their clients' interests on a parity with their own.

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⁶⁶ 'Ed Miliband Seeks Banker Disciplinary Code', BBC 11 Sept. 2011, <http://www.bbc.co.uk/news/uk-politics-14869650>. [accessed 11 Sept. 2011]

⁶⁷ Friedman, *Capitalism and Freedom*, 13 (italics in the original).

⁶⁸ Offer, 'Self-Interest, Sympathy and the Invisible Hand'.

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Reassessing the basis of economics:

From Adam Smith to Carl von Clausewitz

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This essay's hypothesis is that neglect in the English-speaking world of the ideas on economics of the nineteenth century Prussian strategy theorist Carl von Clausewitz deprives the discipline of very useful knowledge and moral content. Repairing that neglect would enhance the subject's moral and methodological base.

Neoclassical economics has a particular focus and method, which the current soul-searching about its usefulness in resolving today's GFC highlights. The "focus" can be traced to its historical origins in the late eighteenth, early nineteenth century London-centered, world-wide emporium that fixed people's attention on the individual's behavior in the marketplace. This fixation has been an axiom of classical and neoclassical economics ever since (Amsperger and Yaroufakis, 2006). The "method" economists' associate with Cournot, Dupuit, Walras, Jevons, and legions of neoclassical economists in their trail, who have attempted to turn their subject into a prescriptive science (Locke, 1989, Khurana, 2007, Dorfman, Samuelson, and Solow, 1958, Neumann and Morgenstern, 1944). Their emphasis on quantities, to achieve scientific rigor, has impoverished economics by drawing its attention away from the complex interactions of norms and rules, and disputes over goals (finance versus production, wealth concentration versus wealth distribution, etc.), thereby making neoclassical economics in the English speaking world, because of this very distraction from the non-quantifiable, part of the problem rather than the solution to our current economic crisis (Dobbin and Jung, 2010, Locke and Spender, 2011).

Enter Clausewitz

If the historian's attention shifts from the British Imperial emporium to late eighteenth and early nineteenth century central Europe, he/she finds people preoccupied with a different set of problems that developed into different types of economic postulates from those that preoccupied classical economists as they set economics off on its long journey. The era of the French Revolution and Napoleon amounted to thirty years of upheaval that brought kingdoms and empires low, and abolished principalities and city states. Survival of political entities became problematic. This is the environment in which Carl von Clausewitz lived, where people's minds focused on the competition of great powers. Clausewitz's own life (1780-1831) was mostly spent as a soldier fighting for Prussia.

A different focus

Since he lived most of his adult life in an era of continuous war, Clausewitz wrote about it; and his unfinished classic, *Vom Krieg* (1832) is arguably the most famous work on the subject (like Adam Smith's *The Wealth of Nations* is in economics) of the past two hundred years. In order to see how Clausewitz developed a different focus for economics, what he meant by war needs to be clarified.

He is famous for having said that “war is the continuation of Politics by another means.” By Politics he meant statecraft; he and his followers took the state as their basic analytical unit in war and economics and in this respect they differ fundamentally from Smith and his disciples who concentrated on the individual actor competing in the market place. In Anglo-Saxonia and Francophonia late 20th century economists had grown so use to making the individual the focus of their calculations that they have forgotten that this had not always been the case. Up to 1940 in Germany primarily but also to some degree in Britain and the US, the historical school framed economics in terms of state rivalry. One does not have to look beyond Friedrich List, about whom people in German universities still write PhD theses, but there are others (Gustav Schmoller and Werner Sombart, for examples) who spoke of economics in terms of state rivalries. It’s in the language: When Sombart claimed (1925) that “the growth of large-scale nationalistic warfare” is the root cause of economic development, since the “demand for more effective weapons, offensive and defensive, stimulate[s] technology and invention” we have an economist thinking in the Clausewitzian mode – a mode incidentally that goes further to explaining the development of Information Technology in the US than any neoclassical economist’s reasoning about how IT’s growth is ultimately driven in the marketplace by the search for new ideas by profit-seeking innovators (Castells and Hall, 1994, 17).

That neoclassical economics dominates the subject today (and has driven the historical school into the ground) does not mean that the world has lost interest in economics as state rivalry. On the contrary, the language of economic competition is expressed almost exclusively in this way: the economic rise of China, the stagnation of Japan, the de-industrialization of the United States, problems of the Euro Zone, the challenge of the BRIC nations to the hegemony of the mature economies are common reference points in international debate. Talk about state economic rivalry did not stop after Clausewitz’s generation focused on it, or after World War II. It is a continuous preoccupation, despite the theoretical orientations of the triumphant neoclassical school. This paper in the first section (The Moral Difference) discusses how a Clausewitzian focus on the nation-state enhances the moral dimension of economics; in the second section (A Different Method), it discusses how a Clausewitzian methodology enriches our understanding beyond the knowledge limits of neoclassical economics.

I. The moral difference

There is no need to explain why neoclassical economics in Anglo-Saxonia avoids questions of morality and is, therefore, of little use to people who wish for economics to have an ethical dimension. As a science it practitioners have proclaimed that it qua science does not deal with ethical questions. Since the neoliberal Chicago school justifies the ideology of greed the debate in neoclassical economics for a long time ended there. Discussions of moral reform since the GFC of 2008 are limited primarily to the ethics of the individual. A Clausewitzian outlook, however, is another matter. To discuss it, the possibility that the state can act as a moral entity has to be entertained.

British people and especially Americans have a real problem with the state. Government is perceived not only as the enemy of freedom but as corrupt and inefficient. Constantly, in the new African nations, for example, we hear about how government officials are bribed and the wealth of those nations squandered; nothing much is said, however, about those who are doing the bribing in the private sector. The study of classical and neoclassical economics

grew up in a world beset with these ideas. Government was replaced by markets and the invisible hand in economic calculation. Even in the twentieth century, when the visible hand of management (Chandler) replaced the invisible hand as an arbiter of economic efficiency, the anti-government view persisted because the new managerial hierarchies were in private sector corporations and the schools that trained their management were privately funded, private institutions (Harvard Business School, Wharton, University of Chicago, etc.) that primarily serve private interests. While the mystique of the new visible hand of private sector management grew, a litany of attacks on regulators and civil servants has continued to make government the essence of ineptitude in American minds.

Clausewitz lived in a semi-autocracy that was a Rechtsstaat (a state administered by law). The monarch, his generals, and civil servants did not rule by caprice but through a system of laws and regulations, designed by them to further the well-being and strength of the monarchy in its struggle for survival and advancement in great power politics. Prussian civil servants seldom thought that private businessmen and industrialists were more than special interest groups, and, therefore, not to be trusted with looking after the public interest. That was the job of the state, led by a general class (in France, the *hauts fonctionnaires*, in Germany, the *Beamtentum*) that was especially trained to this task. During the Revolutionary Era (1789-1815) Prussia's destruction by Napoleon's armies convinced the monarch and his advisors that the civilian and military leadership had performed badly. A period of reform ensued, which included reforms of the education of young people destined to be army officers and civil servants. Clausewitz was one of them.

Wilhelm von Humboldt, who took the educational reforms in hand, was a humanist. Although appreciating mathematics, he prized the educational value of classical languages more. Humboldt wrote to his wife Caroline: "It is only through the study of language that there comes into the soul, out of the source of all thoughts and feelings, the entire expanse of ideas, everything that concerns man, above all and beyond everything else, even beauty and art." (quoted in Wertz, 1993, 1). Humboldt espoused classical languages as media for the cultivation of an "inner self," not just for the individual's benefit but to prepare an entire ruling class for leadership functions. That vision inspired his creation of a new Prussian secondary school system (*Gymnasien*) and the founding of the University of Berlin (1810).

The *Gymnasiums* system stressed moral education instead of technical training because it was widely believed that elites fail not through deficiencies in their knowledge and skills but through weakness in their character. As the general class charged with furthering state interest, the education needed to provide fledgling civil servants with the moral character that would guide them to serve the kingdom's and not their personal or some group's (like businessmen's or merchants') special interest. The classical education Humboldt fashioned intended to instill in the directing classes a sense of honor, honesty, duty, and patriotism as well as a deep appreciation of culture.

.In nineteenth century Prussia enlightened civil servants carried through the modernization of the country – in promoting a common market (the *Zollverein*), in further educational reforms, which included the technical and later the commercial *Hochschulen*, in implementing state health, accident, and pension schemes, because a secure population is important to state power, and generally in leading the Prussian-German monarchy to world prominence. The impulse did not come from the merchants or the university professors as much as from this general, and much admired, class of state civil servants. The most famous among the state servants, Otto von Bismarck, and his minions, schooled by Humboldt, served the monarchy

faithfully. His use of power was the epitome of what Clausewitz meant by the exercise of reason of state. And it can generally be said that their policies advanced the economic well-being of the nation.

But Bismarck is also famous for *Realpolitik*, which in the hands of an authoritarian monarchy bred ruthlessness and in a totalitarian state, led to great crimes against humanity. The German *Beamtentum* fashioned in the nineteenth century and educated in Humboldt's *Gymnasien*, did little to stop the Nazis coming to power and pretty much cooperated with the murderous regime to keep their jobs, witness the collaboration of German civil servants out of a sense of the good old Teutonic virtues of loyalty and duty to the state in carrying out the Hitler regime's obscenities. A century of Humboldtian moral education, therefore, did not serve the German nation particularly well.

In a world of great power rivalry where torture and killing is done regularly in the name of the state it is difficult, therefore, to think of a civil service elite as a moral force. No matter how efficiently they serve the nation and how much they speak of service, honor, and country, with them it is as with Lord Acton's dictum: "Power corrupts and absolute power corrupts absolutely, great men are almost always bad men."

Nonetheless, a Clausewitzian view of the state is very different from the American or British, and the difference greatly affects the moral environment in which neoclassical economics has recently functioned. After World War II economics in Germany increasingly fell under the influence of US econometricians and the neoclassical school. But the Clausewitzian state tradition reasserted itself as well, within the framework of a new democratic regime in West Germany that tried to erase the stain of National Socialism. Politicians and civil servants as in Clausewitz's era assumed a prominent role in reestablishing community in the devastated country.

The chief immediate postwar issue was firm governance, what the Germans call *Mitbestimmung* or co-determination, for if the West Germans turned their back on socialism they wanted to restrict the power of owners and managers within firms because of their cooperation with the Third Reich.. The concept is alien to Americans who have a proprietary conception of the firm, which only gives owners and the management it sanctions a voice in firm governance. Germans and other continental Europeans inherited more of an organic conception of the firm, according to which elements that compose the firm (essentially owners and employees) have a legitimate claim to a voice in governance. A broad coalition of political parties, church groups, and trade unions, supported the co-determination bills the German Legislature enacted in the 1950s and 1970s, which gave employees a strong voice in firm governance. Under co-determination the civil servants act as guarantors that the provisions in the legislation will be administered correctly and fairly in the interest of all co-determinants. Nothing similar happened in America.

When orthodox American and British economists ignore matters of firm governance, they leave the American worker to the tender mercy of a managerial caste that runs the firm first in the interest of top management and second to the furtherance of what is commonly called "shareholder value" The powerless employees' interests are neglected, with the results that since 1979 less and less of the earnings in American corporations have been distributed to non-management employees (Locke, 2012). In fact, US neoclassical economists have witnessed, with scarce comment, one of the most radical redistributions of wealth to the

disadvantage of working people and the middle classes in US history (see the RWER's numerous postings on the subject).

There is nothing inherent in neoclassical economics and econometrics that makes this moral cowardice vis-à-vis the radical distributionists in America's leadership elite, necessary. On the contrary, in Germany, a Clausewitzian concern for a morally cohesive society, prompted neoclassical free market economists (Walter Eucken, Franz Böhm, Wilhelm Roepke, etc. centered at Freiburg University) to work closely with government (Ludwig Erhard and Alfred Müller-Arnack) on the implementation of co-determination and the social market economy. The difference between Germany and America, then, is not neoclassical economics but the presence or absence of a Clausewitzian tradition in governance. This tradition prompted the German economists, who understood that there was a great difference between a market economy functioning in a society composed of a small privileged elite and a mass of poor people, and a free market in a society with a large middle class, actively to promote the creation of the latter (Ancil, 2012)

Missing this public service tradition, Anglo-Saxon neoclassical economists let private interests prevail over the public good.

II. A different method

Admirers of Clausewitz assert that his strategic vision, conceived over 200 years ago, adds explanatory power to the discipline because his assumptions about economic actors differ from those of orthodox economists. His state oriented strategic management thinking is expressed in books and papers such as *Clausewitz Strategie denken*, Henning Schildgen's *If Clausewitz had been an economist: Economics as an instrument of Power in Clausewitz's Strategic Management Model* (that borrowed heavily from Rasmus Beckmann's analysis of Clausewitz's strategic model in a contemporary context (Schildgen, 2010, Beckmann, 2008), and in courses and executives seminars taught at the Harvard Business School and other management education venues.

Whereas neoclassical economists in the positivist tradition seek through rigorous scientific method to make economic outcomes predictable, Clausewitz reasoned about knowledge in a different way. He lived in a Kantian-Hegelian environment. G.W.F. Hegel, the most influential philosopher of Clausewitz's mature years, thought dialectically, which means that the purpose of study is to think about things in their own being and dialectical movement. Contradiction does not exist in people's minds (positivism asserts) but in the real world. But to Hegel everything is contradictory, and if natural scientists think otherwise, it results from a logic that is the logic of the moment, the logic of the simplified world. Dialectical thinkers introduced the logic of time. As Marx explained when commenting on dialectical materialism: "Dialecticians insist that non-contradiction in the formal logic sense [occurs because scientists] fix their categories temporarily, which are often inadequate to apprehend the real world, a world in constant motion that cannot and should not be reduced to categories frozen in time. (Marx, *Capital*, Vol. 1, Afterword, 5). How much Clausewitz read of Hegel or any other dialectician is not particularly known; but he was interested in philosophy and logic and, unlike classical economists, thought dialectically with respect to causality and the importance of time.

Disorganized complexity and the unknowable

Consequently, although he addressed simple problems with Newtonian concepts, Christopher Bassford claims that Clausewitz unlike British, French, and American economists also used new tools of mathematical probability calculations to deal with problems of disorganized complexity (Bassford, 2008). His belief that reality is fraught with the unknowable (*Ungewissheit*), resulted in methods of analysis that were very different from those of orthodox economists. He was careful about simplified model building. As he put it, "The scientific character of [my theory] consists in an attempt to investigate the essence of the phenomenon of war and to indicate the links among the phenomenon and the nature of the component parts. No logical conclusion has been avoided, but whenever the thread becomes too thin I have preferred to break it off and to go back to the relevant phenomena of experience." (Quoted in Bassford).

Genius, esprit de corps, and uncertainty

In the fog of war Clausewitz knew that successful outcomes depend much on the chief executive's genius and on the skill and esprit de corps of the organization he led. Napoleon was famous for his rhetoric; other great commanders, including Napoleon himself, had charisma. Nobody could predict the appearance of these irrational traits in commanders or define what precisely they are, but they are palpable and at times event-deciders.

Among those factors that influence the outcome of military conflict, he included the hate intensity of peoples and the talent of command, categories of analysis that could not easily be included in a mathematical decision model. If he conceded that the irrational shaped war's outcome, Clausewitz did not leave matters there.

Contingency planning, mission directives

Commanders in their work had to cope with uncertainty constantly. He attributed it to the "Friktion" that people encounter when operating with incomplete information. To deal with it he developed a system of strategic thinking that permitted the commander to face the complexity of the unexpected and the irregular, not by simplifying as positivists do, but through contingency planning, which promotes the calculation of the incalculable. Louis Pasteur said that accidents can best be confronted by the prepared. Clausewitz observed that a commander can do this preparation because his reflective eye can perceive, from his position, all possible scenarios, carefully examine them, and arrive at an optimal strategic decision. This strategic thinking, in Clausewitz's words, "Is no more and no less than the search for new ways to clarity" (quoted in "*Management*," 2003, 2).

No amount of strategic thinking could succeed if the army could not carry out its assigned tasks. Organizational capability and strategic thinking went hand in hand. The Prussian General Staff, a nineteenth century phenomenon whose post-Napoleonic reform began in Clausewitz's time, a reform in which he actively participated, worked constantly to cement its relationship with the army organization to make command and rank and file both think and act together. That was very Clausewitzian. As the army evolved, its masters sought cohesion by giving the field commander and the chief of staff co-responsibility in matters of command decision. Empowered with co-responsibility the chiefs of staff developed the policy of issuing "mission directives" (*Auftragstatik*) to subordinates instead of detailed orders, which allowed the man on the spot maximum freedom in deciding how to achieve the assigned tasks. A

highly decentralized command system meant that tactical and administrative decisions occur at very low echelons of command by officers in which their superiors placed great trust. At lower echelons officer aspirants did their training in a regiment (Clausewitz did), alongside the soldiers; each aspirant learned, as weaponry evolved, how to use all infantry firearms. Personnel rotated officers regularly between general staff and field positions in order to build like thinking between line and staff that the successful implementation of *Auftragstatik* in war required. The Prussian army introduced war games in its training regimes in the 19th century; in the First World War, whereas the French army left the development of small arms weaponry to the noncombatant staff, in the German the soldiers, who used them in the trenches, participated directly in the design and improvement of their weapons, just as a machine operator in a German factory would be involved in the purchase of the machine he would use; and command also promoted organizational asymmetry in field units, which allowed operations the sort of flexibility that contingent theory and the fog of war demand (Lewis, 1985, Locke, 1999).

When things went well, the gifted group of nineteenth century soldiers who brought about a revolution in military planning and strategic thinking during the evolution of the Prussian General Staff could celebrate the results. This happened, during the wars of German unification in the mid-nineteenth century, carried out under the brilliant Triumvirate, the Minister President, Otto von Bismarck, the Minister of War, Albrecht von Roon, and the Chief of Staff, Helmut von Moltke. Under Moltke's direction the Prussian General Staff proved the value of the strategic "search for clarity" during Prussia's victories over Denmark (1864), Austria (1866) and France (1870). Success bred emulation; armies everywhere set up general staffs on the Prussian model.

But things, as Clausewitz knew, could go wrong. A famous example of how *Ungewissheit* (the unknown) compromises the most thorough contingency planning and organizational preparation happened to Germany during combat, under another von Moltke, the great man's nephew, at the outbreak of the First World War. His lack of will (an accident that no planner could foresee) and the mistaken judgments of a subordinate sent out to investigate the situation first hand at a critical juncture, an example of *Auftragstatik*, led to the fatal decision to halt the attack just when the strategic plan might have been pushed through to success by a more audacious and willful commander. The failure eventually brought down the Empire.

In military commanders or in businessmen, Clausewitzians make the same distinction that Nietzsche does in the metaphor of the Dionysian and Apollonian man. In his study of *Young Nietzsche*, Carl Pletsch observed that, for Nietzsche, the Apollonian "is the principle of clearly delineated images, permanence, optimism, individuation and rationality. It is striving for clarity" (Pletsch, 1991, 131-31). This is the ethos of neo-classical economics, and of classical American corporate management. On the other hand, for Nietzsche, the Dionysian expresses "the principle of flux, impermanence, suffering, and pessimism.... an irrational force, impulsive, wild, and instinctive (ibid)." This is the creative power of the great general and the great entrepreneur. On a philosophic plane, while Nietzsche "affiliates Schopenhauer's concept of the 'idea' or 'representation' with Apollo, he associates Dionysius with the "will." Accordingly, whereas the Apollonian vision is timeless and "responsible for the constant formulation and reformulations of the forms of knowledge and rationality that order our everyday life, the Dionysian urge, which is "momentary, exceptional, and counter-intuitive," is "dangerous to any structure of reality." It is the maelstrom of every impulse caught in the flux of time." For this reason, for Nietzsche, the Dionysian is the more profound of the two modes. It is the empiricist's nightmare.

Clausewitz would have ranked the great commanders and Clausewitzians creative business people among the Dionysians; their unaccountable and unpredictable flashes of genius, imagination, and rhetorical flourishes determine outcomes and, as Napoleon said, the fate of empires; so did their ability to fashion a new and unexpected production systems at Toyota, which undermined Detroit. Nonetheless, the organization men and women in a highly-complex globalized economic system, beset with continuous change, increasingly complex networks, and technological innovation, are the ones that make the success of innovative systems, like those invented in contingency planning.

Two examples of how Clausewitzian thinking enriches economic analysis

Foreign trade

The classical formulation of international trade David Ricardo gave in his theory of comparative advantages, which was an elaboration on Adam Smith's comments on the subject in *The Wealth of Nations* and which is today taught to undergraduates in economics courses all over the world. Comparative advantage appears when a country has a margin of superiority in the production of goods and service. It exports those and imports from countries that have a comparative advantage in other goods and services that it does not have. The theory has had its supporters and detractors but what is striking about the interchange between them is how the discussion takes place in the terms formulated first in the great London emporium where the debate began. Ricardo's argument assumed that two countries and two commodities (wine and cloth) were involved, that there was perfect competition, labor was the only factor in play, labor was perfectly mobile within each country but not between the two, that there was free trade and no technological movement or transportation costs. The critics talk about the shortcoming of assuming that value is determined by labor, or assuming that there is full employment, or that demand is ignored, no evolution of the factors of production are permitted, that Ricardo assumes that there is no free trade and there is complete specialization, etc. – This language is fit for the London emporium but not Clausewitz's continental Europe, not the world of great power politics where the preoccupation of those left behind in the race is how to catch up with and even surpass their competitors, how to prepare the material strength of the state to see it through. This was the preoccupation of Japanese leaders after the war and of imaginative Chinese Communist Party bureaucrats after Mao's death. So the axioms of neoclassical economics do not have much to do with geo-political economic ambitions.

For Clausewitzians the discussion about the theory of comparative advantage is clearly limited. Ian Fletcher wrote about the limitations in his article "Dubious assumptions of the theory of comparative advantage" (Fletcher, 2010). Ricardo's is a "static theory" about how best to use existing factors. It tells economists the "best move today, given our productivity and opportunity costs. It does not tell us the best way to raise productivity. "That, however, is the essence of economic growth [and industrialization], and in the long run much more important than squeezing every last drop of advantage from the productivities we have today" (Fletcher, 103). Comparative advantage, he also notes, is "narrow theory," It is only about the best uses to which nations can put their factors of production. "We have certain cards in hand, the others players have certain cards and the theory tells us the best way to play the hand we have been dealt. Or more precisely it tells us to let the free market play our hand, so market forces can drive all our factors to their best uses in our economy." It does not, however, tell us how to reshuffle the productivity cards; it is not dynamic.

The theory of comparative advantages is, therefore, not very helpful to people involved in strategic thinking about great power rivalry. And today, governing elites in America need help, inasmuch as very little about US international trade policies, if they can be called that, results from strategic thinking. In the US an ideology of egoist self-interest prevails in orthodox economics, and trade policies are set by lobbyists to the advantage of special interests. The result: capitalists like the high profits and consumers the low prices when imports replace domestic produced goods, but the workers lose their jobs as low tech jobs move overseas, high tech jobs do as well, the trade imbalance with China increases and the Chinese amass huge amounts of US treasury bills with which to finance their overseas expansion, while the tax base erodes in the US as special interests avoid taxes; the American people accumulate a huge private and public debt, and the strategic interest of America and its allies suffers through this demoralizing cascade of events.

To recover US politicians and civil servants need not just to ward off the special interests when setting trade, fiscal and monetary policy, but to obtain better input from economic theory. That science cannot be exclusively the positivism of orthodox economics. A move away from Ricardo to Clausewitz permits the observer first to focus on the state and not the individual and second, because his theory engages in contingency planning that minimizes the effects of the unknown and unexpected, allows the observer to deal better than the neoclassical economic theorist with the complexities of purpose, goals, and means in the accidental world of great power struggle. This thinking process opens the door to non-positivist arguments about economic outcomes; it turns to the situational roles of the thinkers and policy makers themselves, to their moral education, their esprit de corps, their sense of the nation's purpose, in order to usher in an economics that better copes with change in a trade world continually in flux. It allows economics more to serve commonwealth than special-private interests.

Firm efficiency

The second subject selected to illuminate the usefulness of a Clausewitzian compared to a neoclassical outlook is firm governance. American and British neoclassical economists are very practical when they approach this topic. They consider the firm to be a money mill whose efficiency can be calculated by Return on Investment rates or annual profits. If the firm is listed on the stock market, then efficiency can be measured by a stock's market performance. These numbers provide objective data that fit mathematical analytical models. When the subject was extensively discussed among German business economists in the 1920s, most thought "the 'efficiency yardstick' should not be the greatest income to the capitalist at the least expense but the greatest benefit to the community (Locke, 1984, 160). But such a measurement, however desirable, could not be objectified, so the money mill calculators prevailed, especially with the triumph of capitalism after WWII.

The trouble is that results reporting does not reveal much about how results are obtained. The firm remains a black box about whose inner workings and nonfinancial relationships with the outside world neoclassical economists and investors are not especially concerned, because in neoclassical economics the management efficiency problem is resolved in the competitive market place where badly managed individual firms are eliminated. But for people like Clausewitz, who are preoccupied with the state's economic performance, the question of just how management performs is of paramount importance because the inefficient management systems in one state, especially their own, can lose out in industrial and manufacturing state rivalry to different but superior management systems in other states..

Managerialism

In the author's work this Clausewitzian concern has been a prime focus. The system on whose deficiencies attention is focused is American management to which neoclassical economics is wed. The system is called managerialism and. is defined as

"What occurs when a special group, called management, ensconces itself systemically in an organization and deprives owners and employees of their decision-making power (including the distribution of emoluments) and justifies that takeover on the grounds of the managing group's education and exclusive possession of the codified bodies of knowledge and know-how necessary to the efficient running of the organization" (Locke, 2009, 1).

It use to be thought, and still is by a decreasing number, that managerialism gave the US an edge in economic performance and hence amounted to a wealth-fostering plus in the economy, the so-called "fourth productive factor" (Hartmann, 1963, 149). Currently its detractors claim that managerialism is not only immoral (because it mal-distributes the wealth) but inefficient in that it puts US firms at a disadvantage in their competition with firms in other advanced countries, i.e., Germany and Japan that do not have systems of managerialism. This is a Clausewitzian argument because it asks the investigator to come to terms with the nonmonetary aspect of efficiency in an organization's and a state's work culture, i.e., the relationship between management and the work force, its relationship with extra-mural training and educational institutions, its esprit de corps, etc.

Obviously, these arguments do not appeal to neoclassical economists, not least because they do not like the evidence upon which they are based. To describe institutionalization and how it develops requires researchers to read extensively in the archives, in secondary literature, and private letters, and to conduct interviews. Neoclassical economists do not trust this research, which produces argument by example, anymore than they do comments of people in historical records or the subjective judgments of historians perusing the record. Clausewitz certainly appreciated rigor in research, but with an appreciation of the cunning of reason, the unrepeatable, the irrational, unknowable, and inexplicable, he would neither ask us to turn a deaf ear to the historian's or biographer's record or to accept the rigor of neoclassical prescriptions that have failed repeatedly properly to predict processes and outcomes. Accordingly, Clausewitz's methods are historical not scientific, which is hardly a shocking admission because it is also true of neoclassical economics. As Hollanders notes,

"[the economist] Hicks stated that 'as economics pushes on beyond 'statics,' [as did Clausewitz in the dynamic of time] it becomes less like science and more like history.' Similarly as econometrics pushes beyond repeatable events, it becomes more like history. ... In those cases econometrics is a case of historical statements (Hollanders, 2011, 126)."

A Clausewitzian comparative nation-state approach to matters of firm efficiency, therefore, permits an analysis that goes beyond neoclassical economics and even associates it, as part of managerialism, with the efficiency problem. To illustrate, In *Confronting Managerialism* and other studies the author makes three points about firm efficiency when comparisons are made between a regime of managerialism (USA) and regimes without managerialism (Germany and Japan).

The first is the stated purpose of business. Alfred P. Sloan, Jr., long-time head of General Motors, whose name is on the business school at the Massachusetts Institute of Technology, famously said: "We are not in the business of making cars; we are in the business of making

money.” (Quoted in Rother, 2010, 62) Money for whom? It might be asked. Not for the shareholder, that is a myth, because US firms are managed under a director primacy regime, in which the CEO and the board of directors he/she appoints, run things, including distribution of emoluments. The money is primarily for them. And at GM, elsewhere in Detroit’s Big Three, and in other Fortune Five Hundred Firms, top management implemented centralized financial reporting systems “based heavily on analysis of reported management accounting data” (Rother, 2010, 63), which allowed headquarters carefully to chart how much money they were making. This is pure managerialism, installed in US corporations when money men (accountants and controllers) replaced engineers in the boardrooms during the second and third quarters of the 20th century.

By contrast, Peter Lawrence in his study of West German Management noted that when the German manager is asked about the purpose of his enterprise, he never says that it is to make money (Lawrence, 1980, 166). If he is pushed on the subject, he will simply say that profit-making is incidental to the greater purpose of the firm, which is to provide superior products and services to customers. Lawrence observed that American management is skeptical; they think that they are being more frank and honest when they state the purpose is money but the truth is Germans do not share their values. Whereas, Lawrence continued, Americans believe “if you can pay you’re equal,” Germans think “if you are *leistungsfähig* (capable of performance) you’re equal.” (Lawrence, 1980, 98). German management expresses this value and Japanese managers uniformly echo these sentiments. They place customer satisfaction high on the list of their firm’s “mission statements.” Such mission statements, surveys’ affirm, were and are not empty rhetoric (Locke, 1996, 212).

The second point is about business education systems, about how they came in the US to support and institutionally express managerialism, and about how in non-managerialist regimes business education traditions work against the institutionalization of managerialism. Since the issue is firm efficiency and the contention is that industrial firms run by a management caste were (are) less efficient than those in Germany and Japan that were (are) not, systems of management education especially for manufacturing become by extension factors in evaluating firm efficiency.

In the US before WWII business education was primarily vocational; after it was transformed into a pseudo science that supported the rising managerialist caste (Khurana, 2007; Locke, 1989 1996, Locke and Spender, 2011). The most obvious example of this change is the postwar explosion in MBAs, non-specialist generalist management degrees, meant for students in elite business schools being fast-tracked in their careers into the management caste. Concurrently, after the war the prominent philanthropic foundations (Carnegie and Ford), in cooperation with business school deans in elite management education institutions seriously upgraded the scientific content of management studies. In this reform neoclassical economists and econometricians, while reforming at the same time their own studies, played a significant role, which means that the financial and reporting systems that Johnson and Bröms blame for the poor performance of US automobile firms and the financial models that brought on the GFC of 2008 were designed by them. Under their tutelage, moreover, the business schools did not take up the challenge of the Quality Revolution in US manufacturing, but shifted their research interests to finance economics and increasingly streamed their students into the investor sector of US capitalism (Locke, 1996, 228, Locke and Spender, 158-168).

This should not surprise people because there was nothing Clausewitzian about US business school reform. It was not carried through by enlightened civil servants in the public interest but by the private sector that pushed business education vigorously as the names of the rich businessmen, which adorn these institutions and the names on the endowed chairs of the professors within them demonstrate. These business schools ideologically and practically do not serve broad community interests but the particular interests of free enterprise and the management caste. As the prescient Thorsten Veblen in 1918 foresaw, in the infancy of business (commercial) schools, they came to incorporate the predatory instincts of managerialist businessmen (Kemp, 2011).

Although Americans believe in convergence (which has occurred partially on their system in the UK, Belgium, Holland, Scandinavia, Spain, and France), in Germany and Japan neither managerialism nor the managerialist educational model have prospered. Germans and Japanese think that management is not a generic subject; it is specific to business type and place. Consequently MBA educational programs have not flourished in either country. Since firms serve the specific needs of the customer, they prefer to recruit specialists (in marketing, finance, cost accountants, etc.) in Germany and graduates in arts and sciences from good universities in Japan and train them in-house or in special courses organized by nonacademic associations, like the Japanese Union of Scientists and Engineers (JUSE), the German Engineering Association (VDI) or in other employer sanctioned training groups. Besides, in Germany, where employees elected representatives sit on supervisory boards and works councils that participate in firm governance, management is more diffuse. There is much less of a social-ideological or legally defined specific management caste.

The third point that these studies about managerialism emphasize is the relationship between leadership and the rank and file in organizations. This relationship was very important in Clausewitz's appraisal of the efficiency of organizations, but something that neoclassical economists, because of their method or just plain indifference, mainly ignore. For Clausewitz high employee dependent system of management succeeded; for managerialists, because of their appreciation of the knowledge and intelligent of their elite, systems with low employee involvement in management, they did not. Most believed that the formal budgeting programs and reporting system the elite learned in business schools was the key to success. So they installed them. The evidence shows that the managerialists are mostly wrong. Germans not Americans make better cars, and more money, too. In German factories where there are broader spans of control and fewer managers than in American the German foreman and skilled workers plays key roles in shop floor and work process decision-making. Lawrence observed that in the factories he visited views about

"Who should do what and how is remarkably free from stereotyping. The sort of antithesis, which is often felt to exist between theory and practice, thought and action, specialist knowledge and generalist judgments, commercial and technical aptitude, even line and staff do not seem to bother the Germans. They do not show much zeal for putting people in boxes. [They] do not seem to see any incompatibility between intellectual ability and educational attainment on the one hand, and working in industry, on the other.... They do not seem to fear that clever people will be bad at action." (Lawrence, 1980, 111).

In other words, the educational and the high employee-dependent systems of German management do not drive a wedge between management and non-management employees typical under managerialism, which milks the system to its advantage, but alienates the rank and file.

Comparative studies of the Japanese and American firm governance systems arrive at similar conclusions (Fruin, 1992, Liker, Fruin, and Adler, 1999, Johnson and Bröms, 2000, Rother, 2011). Proofs of efficiency are not to be found in the rigor of orthodox economists' "scientific" analysis of a firm's short-term profitability, but in analysis of a firm's sustainability -- a Clausewitzian yardstick for measuring efficiency, since it looks at the subject from the viewpoint of community not immediate monetary reward paid out to the managerialist caste or to the slash and burn predatory investor capitalists who often profit at the expense of the firm's community to the point of its bitter dissolution (Locke and Spender, 133-156).

Conclusion

When the wealth and public welfare of the state replace the wealth and welfare of the individual as a principal focus in economic reasoning, new analytical vistas open up. Just as the Prussian Army's concern about the physical and mental health of recruits from the new working class districts of the nineteenth century occasioned sustained study into the Kingdom's economic as well as its military strength, Edward Fullbrook's statistical presentations today about the comparative performance of nations in matters of income, education, health services, and other factors of well-being are not just interesting in their own right but because they provoke further inquiry into the institutional and social factors that create them. A Clausewitzian concern about how social conditions (income and debt levels, private and governmental, educational attainment, etc.) affect markets and how orthodox economics neglect the subject shows that there is a basic methodological incompatibility between the traditional neoclassical economic focus on the firm or individual economic agent (which is then aggregated into macro) and a preoccupation with the welfare of nation states.

However, the dark side of this analysis for today's economists is the nation state itself. If during a century of relative peace (1815-1914), national rivalries spurred unprecedented technological and economic expansion worldwide, total war made them a bad word in the twentieth century. The necessity is for a move beyond state rivalry to a more coordinated non zero-sum approach in the pursuit of state interests, monitored by global public organizations. This limits the usefulness of geo-political power calculations, but the full panoply of Clausewitzian analytical methods in economics can be adapted to this international work just as it has been used to clarify economic conditions within the nation state. The need to act is urgent for two reasons. First, the shortcomings of neoclassical economics as a science, whose assumptions and procedural methods show contempt for the welfare of community, prevents it from disciplining the appetites of the rich and powerful that Clausewitzian analysis exposes. Second, because orthodox economists serve regimes of managerialism in powerful states and are entangled as economic experts in international organizations like the WTO, the World Bank, the IMF, and in the work of multinational corporations, their influence and the influence of the organizations they dominate must be curbed if economics as a profession is to do anything publically useful.

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Mankiw's attempted resurrection of marginal productivity theory

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Part 1 of this paper (<http://www.paecon.net/PAEReview/issue59/Moseley59.pdf>) argued that the marginal productivity theory of distribution has fundamental and insoluble logical problems: (1) the aggregate production function is not a legitimate concept, because capital consists of diverse buildings and equipment that cannot be reasonably aggregated into a total quantity for the economy as a whole; (2) the marginal product of capital (or of labor) is not a legitimate concept, because output in goods-producing industries cannot be increased by adding one unit of capital and holding all other inputs constant, because raw material inputs must also increase if output is to increase; (3) the derivation of the demand for capital (or for labor) is invalid, because it is based on the illegitimate concept of the marginal product of capital; and (4) the return to capital is included in the price of capital, as the “opportunity cost” of the owners of capital, and the opportunity cost is taken as given, like all other costs of firms. Therefore, marginal productivity theory takes as given the main variable that should be explained – the return to capital.

Because of these and other fundamental problems (e.g. the “inseparability problem” emphasized by Hobson and others, and the “reswitching problem” emphasized by Sraffians), it is not surprising that the marginal productivity theory of distribution is quietly disappearing from microeconomic textbooks, both undergraduate and graduate, without mentioning to students this important omission, and this important weakness compared to classical economics and Marx's theory. The leading undergraduate microeconomic textbook in the US (Varian) presents parts of this theory in separate chapters (the supply of labor is presented in Chapter 9, related to consumer theory; and the demand for labor and capital is presented in Chapter 19, related to the theory of the firm), but there is only one point in the book where the supply and demand for labor are briefly put together to determine the price of labor (in the Appendix to Chapter 26 in a discussion of the minimum wage), and the supply and demand for capital are never put together to determine the price of capital – indeed the supply of capital is never discussed at all. The leading graduate microeconomics textbook (Green, Mac-Collel, and Whinston) is 1000 pages thick, and there is no discussion whatsoever of the marginal productivity theory of distribution, not even the marginal productivity theory of labor and wages.

However, bucking this trend in microeconomics (where the theory of distribution has traditionally been located), Gregory Mankiw has attempted to resurrect marginal productivity theory in his best-selling intermediate *Macroeconomics* textbook (Chapter 3). Mankiw presents marginal productivity theory as if there were no logical problems whatsoever. Not a word is said to students about these logical problems, not even the very well known “aggregation problem”. This paper will examine in detail Mankiw's presentation of marginal productivity theory, and will point out its many logical flaws.

Early in this chapter, Mankiw takes the obligatory superficial swipe at Marx:

Karl Marx, the noted nineteenth economist, spent much time trying to explain the incomes of capital and labor. The political philosophy of *communism* was in part based on Marx's *now-discredited* theory. (49; emphasis added)

And he compares Marx's theory with modern marginal productivity theory:

This theory, called the neo-classical theory of distribution, is *accepted by most economists today as the best* place to start in understanding how the economy's income is distributed from firms to households. (49; emphasis added)

We can see that Mankiw uses familiar rhetorical tricks to bully students into accepting his judgment of Marx's theory and marginal productivity theory: *guilt by association* (Marx's theory is associated with communism, even though Marx's theory is about capitalism (the title of his book is *Capital!*), and has nothing to do with communism); and *appeal to authority* (Marx's theory is "now discredited" and marginal productivity theory is "accepted by most economists today as the best theory", without telling us why). (Edward Fullbrook (2007) has also called attention to Mankiw's bullying tactics: "rational people think at the margin", so you better too!; and "economists are like scientists", so what we say has been proven to be true).

I argue, to the contrary, that Marx's theory of surplus-value is far superior to marginal productivity theory, in terms of both logical consistency and empirical explanatory power. Marx's theory is able to explain many important phenomena in capitalism – the fundamental conflicts between capitalists and workers in capitalist economies (conflicts over wages, the length of the working day, and the intensity of labor), the increasing concentration of capital, increasing income inequality, recurring crises, etc. In striking contrast, marginal productivity theory is filled with logical problems, and cannot explain any of these important phenomena in capitalist economies. (See Moseley 1995 for an extensive discussion of the impressive explanatory power of Marx's theory.)

I turn now to an examination of Mankiw's presentation of the marginal productivity of distribution.

1. Factors of production and the production function

The fundamental concept in marginal productivity theory is the production function, so Mankiw's exposition begins with the production function and factors of production. Factors of production are defined as "inputs used to produce goods and services". (47) Two factors of production are discussed: capital and labor. Capital is defined as the "set of tools that workers use: the construction worker's crane, the accountant's calculator, and this author's personal computer." One important omission from this set of inputs is *raw materials* (or intermediate goods in general). But in all goods-producing industries, raw materials are an essential input to the production of outputs. Thus there is a gaping hole in the foundation of marginal productivity theory – raw materials are missing in the production function. This important omission will be discussed further below.

The production function is defined as the relation between the quantity of inputs of capital (K) and labor (L) and the quantity of outputs (Y) (48):

$$Y = f(K, L)$$

It should be noted that all of these quantities are supposed to be physical quantities, not monetary quantities.

As an example of a production function, Mankiw discusses a bakery (this bakery example is used throughout the chapter).

The kitchen and its equipment are the bakery's *capital*, the workers hired to make the bread are its *labor*, and the loaves of bread are its *output*. (48, emphasis added)
But how is bread is supposed to be produced without the raw material inputs of flour and yeast, etc.? Mankiw does not explain.

2. Factor prices

According to marginal productivity theory, the distribution of income is supposed to be explained in terms of the prices of the factors of production. The price of labor is wages and the price of capital is “rent”. Why is the price of capital called rent, and not profit? Because this theory assumes that firms *rent their capital* (buildings and equipment), and the price of capital is the rent firms pay to the owners of the capital buildings and equipment.

This assumption that firms rent their capital equipment is of course extremely unrealistic; most firms own their own capital buildings and equipment (Mankiw makes the even more unrealistic assumption that firms rent their equipment from households!). The assumption of renting is made in marginal productivity theory in order to make it appear as if firms actually make a rental payment to the owners of capital, as one of the firms' costs, and thus to *re-conceptualize the return to capital as a “cost”*, rather than as a residual of price over cost, or a surplus, as the classical economists and Marx conceptualized the return to capital. But this unrealistic assumption does not turn an actual surplus into an actual cost.

As discussed in Part I of this paper, the price of capital (P_K) consists of two components: an explicit *depreciation* component (this period's cost of capital goods) (dP_G) and an implicit *interest* component (rP_G), which is the “opportunity cost” of investing in these capital goods rather than in alternative investments:

$$P_K = dP_G + rP_G$$

Thus, the price of capital is not an actual market price, but is instead a hypothetical price constructed by adding an *implicit* “opportunity cost” to the actual cost of the capital goods. It is not clear why anyone would want to explain this unreal artificial price, which no one ever observes in capitalist economies.

Even more important, the redefined return to capital as “opportunity cost” is *taken as given* (both r and P_G), and not explained. Therefore, marginal productivity theory ultimately takes as given what is supposed to be explained – the return to capital.

Mankiw does not say anything about these components of the price of capital. Students are not told that the price of capital includes the *opportunity cost* of the rental capitalists (in Mankiw's case, of households), which is taken as given in the theory. Students are led to believe that this theory determines the return to capital by the supply and demand for capital, but that is not true; the return to capital is taken as given in this theory.

Mankiw also takes the supply of capital (and also the supply of labor) as given, and thus provides no theory at all of the supply side of the capital (or labor) market. In marginal productivity theory in general, there is no satisfactory theory of supply, either of capital or of labor. (The “theory” of the supply of labor makes the completely unrealistic assumption that workers in capitalism can *choose* the number of hours they want to work. And the supply of labor is in terms of hours, which is inconsistent with the demand for labor, which is in terms of workers; see below) Therefore, marginal productivity theory is at best a theory of the *demand*

for the factors of production (it has been called a “pseudo-distribution theory”). The next section will examine Mankiw’s presentation of the marginal productivity theory of the *demand* for capital and labor.

3. Demand for factors of production

The demand for capital and labor is a decision made by individual firms; therefore the analysis is at the micro level. The main objective of firms in making these decisions is to maximize their profit, where profit is defined as:

$$\Pi = PY - [WL + RK]$$

where P is the price per unit of output, W is the wage rate per unit of labor, and R is the rental rate per unit of capital (whatever that is). Notice again that the cost of raw materials is missing from this definition of profit.

Mankiw starts with the demand for labor, which is supposed to be derived from the “marginal product of labor”, which is defined as the extra output that results from adding one worker (not one hour) and holding all other inputs constant (including raw materials). However, as explained Part 1 of this paper, the marginal product of labor is not a legitimate concept, because output cannot be increased if raw material inputs are held constant. Therefore, the derivation of the demand for labor, based on the illegitimate marginal product of labor, is itself invalid.

Mankiw again uses the example of a bakery:

“As a bakery hires more labor, it produces more bread.” (52)

However, Mankiw does not explain how the additional worker is supposed to produce more bread without more flour and yeast. The additional bakery worker is a miracle worker! Jesus would be jealous.

Mankiw then explains how the demand for labor is supposed to be derived from this (illegitimate) concept of the marginal product of labor: firms hire workers up to the point where the wage per worker is equal to the marginal revenue product of labor (i.e. the marginal product of labor *times* the price of the output; i.e. $MRPL = P \times MPL$). In other words, the cost of hiring an additional worker is compared with the marginal revenue generated by the extra output.

However, if real-world capitalists actually followed this profit maximization rule, *they would lose money*, because capitalists would not have taken into account the extra cost of the raw materials required in order to produce the additional output. Therefore, the actual marginal costs would be greater than the marginal revenue, and the capitalists would lose money on the extra output. Thank goodness that real-world capitalists don’t follow the rules of marginal productivity theory!¹

The same logically contradictory theory is then applied by Mankiw to capital (based on the illegitimate concept of the marginal product of capital and a money-losing profit maximization condition), so the same criticisms apply and need not be repeated.

¹ In the *General Theory*, Keynes commented in a footnote on the usual Marshallian practice of “equating wages costs and prime costs” (i.e. assuming no raw material costs):

The results of such an analysis *have almost no practical application* since the assumption on which it is based is *very seldom realized in practice*. (p. 272; emphasis added)

4. From micro to macro and “economic profit”

In the next subsection (“The Division of the National Income”), Mankiw suddenly jumps from individual firms at the micro level to the economy as a whole at the macro level, without mentioning to students the well-known impossibility of this aggregation (i.e. the “aggregation problem”). If the many different kinds of capital buildings and equipment are to be aggregated, their quantities must be reduced to some common unit of measure. What is the common unit in terms of which the many different kinds of capital are supposed to be measured and aggregated? One can excuse Mankiw for not answering this question, since there is no answer; but there is no excuse for not even mentioning to students this fundamental logical requirement. It teaches students to memorize, not to think.

In this section, Mankiw introduces the following idiosyncratic definition of “economic profit”:

$$\text{Mankiw's economic profit} = Y - (\text{MPL} \times L) - (\text{MPK} \times K)$$

Mankiw's definition of “economic profit” is a *macroeconomic* concept, which has to do with the distribution of the total national income.

However, the usual definition of economic profit is a *microeconomic* concept in the theory of the individual firm:

$$\text{usual economic profit} = \text{accounting profit} - \text{opportunity cost}$$

where “opportunity cost” is the prevailing interest that could be earned on alternative investments. This usual micro definition of economic profit has no meaning at the macro level, since there are no alternative investments at the macro level. Another important difference is that this usual micro definition of economic profit is in money terms and Mankiw's definition is in terms of real physical quantities of output.

It is very confusing and unfair to students to use the same term “economic profit” in a way that is different from what students have learned in their micro courses, and to not even call attention to this important difference. Good students will notice this inconsistency; what will they think? Will they ask questions, or will they just accept and memorize on Mankiw's authority? I hope not the latter.

Who gets this macro “economic profit”, since it is not a return capital nor a return to labor? Mankiw's answer: a third “agent” called “firms”. However, this odd innovation is logically inconsistent with marginal productivity theory, according to which incomes are determined by the marginal products of the factors of production. But “firms” are not a factor of production, and “firms” do not have marginal products. Instead, according to Mankiw, the macro “economic profit” depends on the *returns to scale* of the “aggregate production function” (the usual micro definition of economic profit has no relation to macro returns to scale, or to any production function for that matter). According to Mankiw, if returns to scale are constant (i.e. if the production function is linear and homogenous), then “economic profit” = 0. But according to micro theory, competition enforces economic profit = 0 in the long-run, no matter what the returns to scale of the “aggregate production function”.

It is ironic that Mankiw attempts to rescue marginal productivity theory by appealing to returns to scale, because another important criticism of marginal productivity theory over the last century (starting with Pareto) has been precisely that it is logically inconsistent unless the “aggregate production function” has constant returns to scale. This criticism has come to be known as the “exhaustion problem”. If the production function has constant returns to scale, then the total product is “exactly exhausted” by the returns to the factors, and the theory is

consistent in this respect. However, if the production function has non-constant returns to scale, then either the product is “not exhausted” (a surplus due to increasing returns to scale) or the product is “more than exhausted” (which is physically impossible). Therefore, Mankiw’s attempt to add a third “agent” to receive economic profit – or to pay it! – is not a solution to the exhaustion problem. It only adds contradictions on top of contradictions.

Mankiw states that constant returns to scale is the most likely scenario, in which case economic profit = 0. Mankiw then asks: how do we explain profit in the real world and in the NIPA’s (National Income and Product Accounts)? (good question!) Mankiw’s answer: profit in the real world is *accounting profit*, not economic profit; and because most firms actually own their own capital (rather than renting capital from households, as assumed in the theory), accounting profit includes both rent (from capital) and economic profit (from somewhere). What capitalists and NIPA statisticians call “profit” is really mostly rent, and in the case of constant returns to scale, it is all rent.

It is interesting that, in order to explain the apparent contradiction between marginal productivity theory (economic profit = 0) and the existence of profit in the real world, Mankiw drops the unrealistic assumption that firms rent their capital equipment, which was supposed to help us understand the distribution of income, and assumes instead that firms own their own capital. But if firms own their own capital, why is income from capital called “rent”, and why is it pretended that firms pay rent to themselves?

At the end of this section, Mankiw states:

We can now see the answer to the question posed at the beginning of this chapter about how the income of the economy is distributed from firms to households. Each factor receives its marginal product and these factor payments exhaust the output.
(56)

I argue, to the contrary, that the question of the distribution of the national income has in no way been satisfactorily answered by this chapter (nor by marginal productivity theory in general), for the following reasons: (1) the theory cannot be reasonably be aggregated, and thus there is *no theory* of the macro distribution of income; (2) the concept of marginal product is *physically impossible* in goods-producing industries, because output cannot be increased by an increase of labor or capital without also an increase of raw material inputs. (3) the theory *takes as given* what is supposed to be explained – the return to capital – which is renamed “opportunity cost” and taken as given by firms, like all other costs; and (4) aside from these fundamental and insoluble logical problems, the theory is also logically contradictory if returns to scale are not constant.

5. Cobb-Douglas aggregate production function

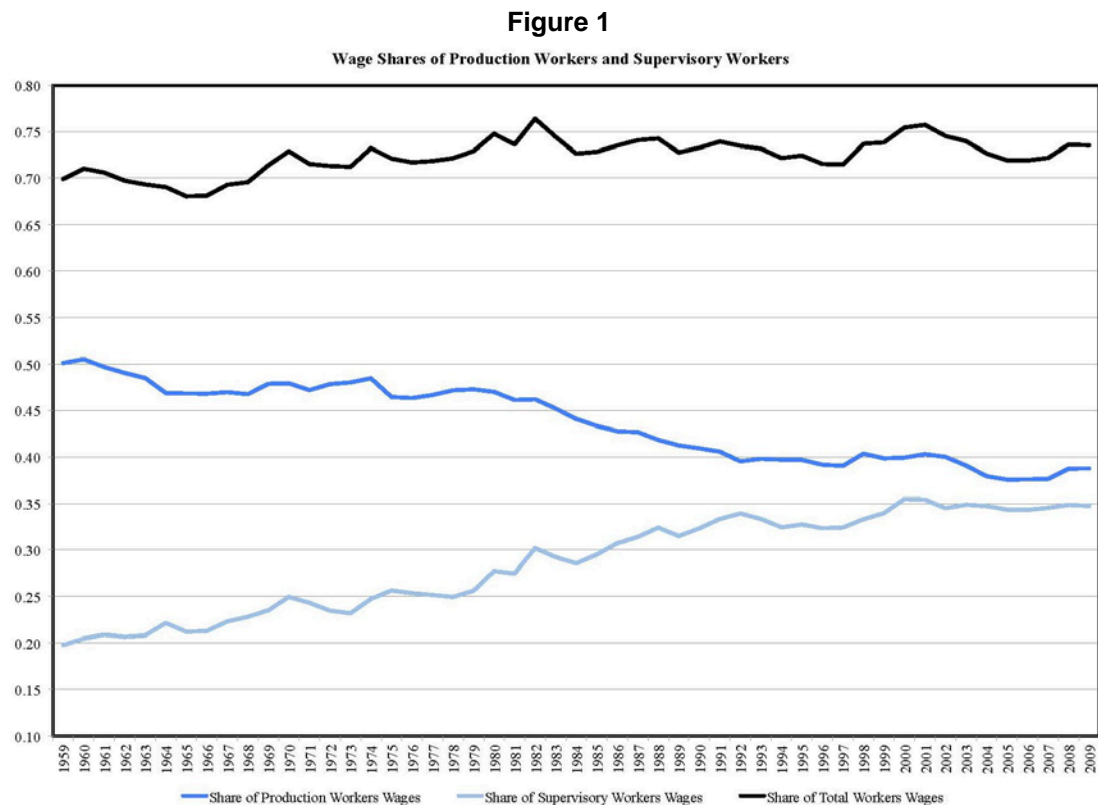
Mankiw’s last two sections on marginal productivity theory have to do with empirical data related to the distribution of income that Mankiw claims provides confirmation of the empirical validity of marginal productivity theory. The first of these two sections is about the familiar (but non-existent) Cobb-Douglas “aggregate production function”:

$$Y = A K^{\alpha} L^{1-\alpha}$$

Again, no mention is made about the units in terms of which the aggregate K is supposed to be measured and how the many different kinds of capital buildings and equipment are

supposed to be added up into a single aggregate quantity. Mankiw treats K as if it were an aggregate quantity, and thus pretends that marginal productivity theory provides a quantitative macro theory of the distribution of income; but this is not true. (A similar “aggregation problem” also applies to Y , which consists of many different kinds of goods and services). Also, again, no mention is made of raw materials and how physical outputs are supposed to be produced without raw material inputs.

Mankiw emphasizes that a Cobb-Douglas production function predicts that the *income shares of capital and labor will remain constant over time*. He presents data on the wage share of income in the US from 1960 to 2010, which remains roughly constant over this whole period at around 0.70, which Mankiw argues “confirms” marginal productivity theory.²



Note: For private economy

Source: National Income and Product Accounts, Bureau of Labor Statistics

However, Mankiw’s definitions of labor and the wage share are too aggregate, and this misspecification hides important recent trends in the distribution of income in the US economy. If total labor is disaggregated into production workers and supervisory employees, some very interesting and important trends are discovered. The wage share of production workers has decreased significantly since 1980 (from 50% to under 40%), and the wage share of supervisory employees has almost doubled over this same period (from 20% to

² 50 years ago, Robert Solow (1958) expressed “skepticism” about marginal productivity theory’s prediction of constant shares. The main reason Solow was skeptical was that marginal productivity theory is a micro theory, and the relation between micro production functions and macro relative shares depends “on a whole string of intermediate variables (elasticity of substitution, commodity demand and supply, degree of competition and monopoly in markets, etc.), so that “it is *hard to believe that the theory offers any grip at all* on relative shares,” which “may be viewed by some as a *symptom of its emptiness*.” (p. 620; emphasis added). Count me among the critics. Nothing but emptiness in this theory.

35%). These divergent trends can be seen in the following graph (the data for this graph was provided by Simon Mohun).

These divergent trends have contributed greatly to the widely-discussed and disturbing sharp increase of inequality in the distribution of income in the US in recent decades.

However, these important recent trends cannot be explained by marginal productivity theory with a Cobb-Douglas “aggregate production function” (even if we ignore all the insoluble logical problems discussed above), because this theory concludes that wage shares should remain constant.

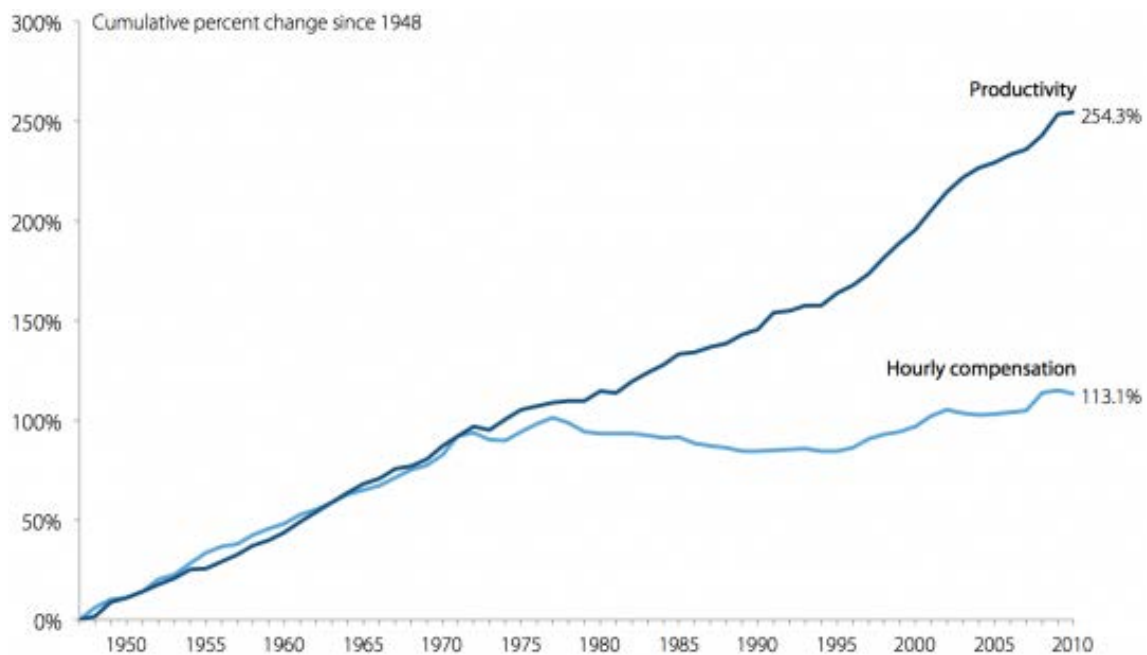
Marxian theory, on the other hand provides a cogent explanation of these important recent trends. According to Marxian theory, the main cause of these trends was the weakening bargaining power of production workers in recent decades, due to slow GDP growth and relatively high unemployment, to globalization and out-sourcing, and the threat of more. In addition, government policies have been more strongly pro-capitalist (anti-unions, reduced real minimum wage, etc.), which has further reduced the bargaining power of production workers. As a result, production workers have produced more and more output and more and more value, but they have not received the extra value they have produced. Instead, this extra value has been appropriated by the capitalists and top executives. The distribution of income in capitalism is not determined by “marginal products” (which don’t exist), but instead is determined by class conflict, i.e. by the balance of power between capitalists and workers, which depends mainly on the rate of unemployment, government policies, and the degree of organization of workers.

6. Labor productivity and the real wage

Mankiw’s section presents data on the productivity of labor and the real wage in the US economy from 1959 to 2007. Mankiw emphasizes that marginal productivity theory with a Cobb-Douglas “aggregate production function” predicts that the trend in the real wage will be similar to the trend in the productivity of labor (this is a condition for a constant wage share). Mankiw divides the whole period into three sub-periods, and presents a table of estimates (Table 3-1) which shows that the real wage and the productivity of labor had similar trends in all three subperiods.

However, once again, Mankiw’s estimates are too aggregate and hide important recent trends. If we disaggregate these estimates again into production workers and supervisory employees, and calculate the real wage and productivity separately for the two subgroups, we arrive at different and interesting results. Figure 2 shows the real wage and productivity of production workers over this period, and is a familiar graph in recent discussions of rising income inequality (this particular graph comes from Mishel 2012)

Figure 2
Growth of Real Hourly Compensation for Production/Nonsupervisory Workers and Productivity, 1948-2011



Note: Hourly compensation is of production/nonsupervisory workers in the private sector and productivity is for the total economy.

Source: Author's analysis of unpublished total economy data from Bureau of Labor Statistics, Labor Productivity and Costs program and Bureau of Economic Analysis, National Income and Product Accounts public data series

Thus we can see that since the early 1970s, the real wage of production workers has hardly increased at all, while their productivity has continued to increase roughly 2% a year. Over this whole period, the productivity of production workers increased 50% more than their real wage. This divergence explains why the wage share of production labor declined significantly over this period. The real wage and productivity of supervisory employees showed essentially the opposite trends over this period. Once again, these important divergent trends cannot be explained by marginal productivity theory, because this theory predicts that there should be no divergences.

Mankiw concludes this section with the following “lesson” for students:

Theory and history confirm the close link between labor productivity and the real wage. This lesson is key to understanding why workers today are better off today than workers in previous generations. (60)

I argue, to the contrary, that if labor is disaggregated into production workers and supervisory employees, there is no close link between productivity and the real wage in recent decades. For both subgroups of labor, the real wage diverges significantly from productivity since 1980. And the lesson we learn from the data is that marginal productivity theory is not able to explain these important divergent trends. In particular, marginal productivity theory is not able to explain why the real wage of production workers has remained stagnant in recent decades, in spite of continuing and significant increases in their productivity. In other words, this theory cannot explain why production workers are no better off today than they were a generation ago.

Conclusion

I noted in the introduction that Mankiw asserts that marginal productivity theory of distribution is “accepted by most economists as the best theory of distribution”. After this review of Mankiw’s presentation of marginal productivity theory, one can only say, “I hope not!” If marginal productivity theory were the best theory of distribution that economists could come up with, then we would be doomed to ignorance forever. This theory is filled with logical contradictions and has no explanatory power. There is no macro theory of the distribution of income at all.

Fortunately, marginal productivity is *not* the best theory of the distribution of income. The Marxian theory of distribution is far superior to marginal productivity theory, both in terms of logical consistency and in terms of empirical explanatory power. So is the post-Keynesian theory of distribution. Therefore, we should continue to challenge marginal productivity theory every chance we get (on these objective scientific grounds), and we should teach and develop these more promising alternative theories of distribution. The emperor (mainstream economics) has no clothes (no theory of distribution, especially profit), and we should continue to shout out its nakedness, and continue to make our own clothes (alternative theories of distribution and profit).

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The evolution of economic theory: And some implications for financial risk management

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Introduction

This paper has its origins in a paper published in Issue 59 of the *Real-World Economics Review* (RWER) titled 'Science and Support: The Struggle for Mastery in Economics' (Spread, 2012). On the basis of that paper I was invited to speak at the Global Risk Conference of the Professional Risk Managers' International Association (PRMIA).⁹⁹ This paper is adapted from the talk given at the conference. The aim is to link the theory set out in the earlier paper (and in books) to financial risk management. An earlier presentation to hedge fund managers by Marc Groz (2004) titled 'Risk and other Dark Matters' provided an introduction to some concerns of financial risk managers.

The paper in Issue 59 of the RWER concerned a process of 'intellectual support-bargaining', whereby makers of theory seek the support of their associates for their ideas. It treats theory formation as akin to a tribal process in which the actual truth or substance of a theory is of lesser importance than its capacity to attract support. And the way to attract support is to develop theory that answers to interests. People with an interest in the maximum freedom of the individual will be inclined to support theories that indicate freedom of the individual is best for society. People with an interest in being looked after by society will be inclined to support theories that suggest we are all responsible for each other, and should all help each other to the maximum possible extent. All interests will endeavour to establish that their own theory is 'natural' or 'scientific' or 'mathematically proven', so as to give it the appearance of being in some way absolute, like the law of gravity. If a theory has the status of the law of gravity then it is non-negotiable. But social laws, of course, are not like the law of gravity. In social science, what matters is the support that accrues to a theory.

What matters also is success in institutionalising a theory. If systems of payments, promotions, careers, prestige and so on can be established, based on a particular theory, then people will find it advantageous to support the theory. Great institutions of learning have been established which become associated with particular theories or particular types of theory. They endure over time because their theorists initiate young people into the theory group, and because they can offer stable careers teaching and developing the theory. You do not need close acquaintance with human history to recognise that the weirdest theories have been supported and institutionalised to the great benefit of their advocates.

The paper in Issue 59 (Spread, 2012, pp. 47-8) suggests that neoclassical economics has been institutionalised on the basis of its mathematical content but with very weak science. Because it is institutionalised, it is difficult to replace it with more accurate theory. Many people find it difficult to reconcile the theory with their observation of the actual functioning of economies. The RWER forms a focus for efforts to develop an alternative. In recent years,

⁹⁹ Global Risk Conference, the Tenth Anniversary Conference, of the Professional Risk Managers International Association (PRMIA), held at the Marriott Marquis Hotel, New York, 14-16 May 2012.

particularly with the onset of the financial crisis in 2007, neoclassical economic theory has attracted ridicule (Spread, 2012, p. 47).

Intellectual support-bargaining is part of a more general process of political and social support-bargaining. The theory of support-bargaining is set out in *Support-Bargaining: The Mechanics of Democracy Revealed* (Spread, 2008). In spite of the title, the book is not entirely about politics; or rather, the theory of support-bargaining understands economic theory as part of the support-bargaining process and hence part of a political process. Politics advances interests through support-bargaining. Theory formation plays a large part in the assembly of support for political purposes. Few will disagree that neoclassical economic theory has had a major political role.

Support-bargaining

The idea of support-bargaining remains very little known, so it is appropriate to give some introductory account of it.

The psychological foundation of support-bargaining, as intimated above, is our sense of insecurity. Human life is lived in a state of insecurity, whether the threats come from invaders, employers or ill-health. The reaction to insecurity is to seek the support of others. Support is most eagerly sought and most readily given in the face of immediate violent threat, because that is when people feel most insecure. But support is important also in the most ordinary circumstances. If a shop assistant is rude to us, we share the offence with friends and receive their commiserations. In all circumstances, from the trivial to the most pressing, whenever we feel insecure, we seek the support of others. And given the pervasive insecurity, this means that we are perpetually seeking the support of others. To get support, we adjust our opinions and actions to conform with the prevailing view of what is right amongst those around us.

This leads to the formation of groups. People in similar situations tend to have similar interests and find it easy to get support from one another for the advance of those interests. Initially, the group forms to allay the sense of insecurity. But once the group is formed it can go further. The mutual support within the group builds a sense of confidence that the group is right in its claims. The group becomes convinced that the shortcomings it identifies in its situation should be remedied, if necessary at the expense of other groups. Groups formed through support-bargaining will seek to advance their interests, over and above the basic interest in reducing insecurity. A group that shows itself to be effective in advancing the interests of its members can expect to attract new members on its own terms.

A group will not only gain confidence through its formation. It will also develop an idea of its strength. Support provides security partly because it implies capacity for violence. In violent times, membership of a well-supported group implies protection against violence, and even the capacity to gain by violence. In *Support-Bargaining* (Spread, 2008, p. 386-7), it is suggested that in violent societies support is backed by violence in much the same way as gold has been used to back monetary systems. In modern political systems, support serves as a proxy for violence under a support convention. The backing of support by violence is much less apparent. The group with majority support is recognised as having the right to advance its interests. It is less trouble, less stressful, less painful, less damaging and less expensive than fighting for ascendancy. It has also proved to be much more constructive. This is the mechanics of what we call democracy. Our constitutions, elections, political parties

and pressure groups represent the formalisation of the informal support-bargaining that is our natural reaction to insecurity.

Intellectual insecurity is an aspect of our general sense of insecurity and results in the intellectual support-bargaining described in the paper 'Science and Support' (Spread, 2012). If you are concerned about the nature of the universe, the folly of humanity or the behaviour of people at work then the natural response is to approach your acquaintances to see what they think and see if it is possible to agree on an explanation. Agreement establishes theory and at the same time establishes a theory group. Such theory groups generate intellectual security.

Virtually every society has had supernatural beliefs that enabled it to explain the rising and setting of the sun, the nature of the stars, the behaviour of humans and the appropriate reactions to the various phenomena. Very commonly, the phenomena are personified, so that it becomes possible to deal with them in a person to person manner. Attention is focused not so much on the obscurities of the universe or human nature, but on the idiosyncrasies of beings that are understood to control these phenomena. For Greeks and Romans the gods and goddesses provided a continuing soap opera of dysfunctional family life. Everyone could recognise their problems and support their hero or heroine. Everyone could ask for the support of their favourite god or goddess. The gods and goddesses were drawn into human support-bargaining through personification. For most people, now and in the past, intellectual security has depended heavily on this sort of understanding.

Money-bargaining

Besides the gods and goddesses, money is perhaps a lesser creation of support-bargaining. But as long as everyone in a society supports the idea that a particular token has value in their community, then it will be possible to exchange the token for goods and services in that society. It exists and has a function in much the same communal way as gods and goddesses can exist and have functions. Gods and goddesses have been given physical expression as popular subjects for painting and sculpture. Dollars, Euros, Rupees and Roubles all have physical manifestations and have value in their societies because the people of those societies choose to recognise their value and formalise that value in their laws. Money functions as a bargaining counter and is central to the functioning of a money-bargaining system, in contrast to its role as incidental numeraire in the neoclassical model.

Money is thus a creation of support-bargaining. Its function as a bargaining counter gives it a further direct connection with support-bargaining. Where did we learn to bargain over goods and services? What tells us that when something is in short supply, we are going to have to pay more for it? What tells us that a monopolist has a strong bargaining position? The answer seems to be that we know these things because we all have experience of support-bargaining from our earliest times. We know that to get the support of the group we have to conform to the opinions and behaviour of the group. We know that if there is just one group from which we can reasonably expect to receive support, we have to accommodate the interests of that group. We have to concede more in opinion and behaviour for the support that will allay our sense of insecurity. But if there are many groups from which we can potentially gain support, as in a modern pluralist society, then we can afford to exercise our own individual preferences more freely, and still expect to get the support we need. The same dynamic applies in bargaining with money. Prices move in money-bargaining in much the same way as the terms of support-bargaining move between individuals and groups. We can engage in money-

bargaining because we unconsciously absorb the experiences of support-bargaining in our social life. It is not the rational choice of neoclassical theory, but the recognition of bargaining position that has been essential to human survival.

The identification of social theory with the intellectual security of the theory groups that create it makes it immediately apparent why we cannot do without theory. However bizarre the theory may be, we need the sense of security that is provided by common support for a theory. If everyone says the world is made of crispbread, then everyone can rest assured that they know what the world is made of. That is why also there is a tendency, perhaps less apparent now than in the past, to eliminate those who disagree, who may deny that the world is made of crispbread. Such dissenters erode the security of the group. Theory groups seem tribal because, like tribes protecting their territory, they have the sense that their security depends on their theory, and defence of their theory depends on their cohesion in the face of enemies that would displace them. Theorists claim the pursuit of truth, but the psychological imperative is the retention of support for their group, involving rejection of ideas that might divert support to a rival group.

The dependence on theory groups for security explains also why established theory can only be effectively displaced through the provision of alternative theory. Without theory, there is no theory group, and no security. The security of one theory will not be abandoned until another theory, offering comparable intellectual security, is available. Many neoclassical scholars, perhaps most neoclassical scholars, freely acknowledge the weaknesses of the neoclassical model. But before relinquishing the theory, they demand an alternative. The idea of support-bargaining and money-bargaining offers an alternative theory that may in the course of time unite the scholarly tribes. It is an important feature of support-bargaining that it offers an understanding of the theory-making process itself. Many intellectual sub-tribes can function under intellectual support-bargaining. It provides a 'theory of theories' in which different theories held by different theory groups may compete and compare in a process of intellectual support-bargaining. It does, however, make clear that there can be no absolute theory of society. Theories function as theories only so long as the support of a theory group can be maintained.

Evolution of theory

This theory of theory making means that theories will evolve over time in accordance with changing situations, changing interests and changes in group ascendancy. One characteristic of money-bargaining is that it gives scope for individuals to become wealthy, and consequently influential, independently of the support-bargaining process. Ascendant political groups have recognised this tendency, threatening to their ascendancy, and have sought to limit or control the emergence of strong money-bargaining agencies. In the sixteenth century in England the making of significant sums of money was looked on with suspicion by the crown. Anyone getting rich could potentially organise and finance rebellion. Companies of any size operated under crown charters, which meant that the crown could keep an eye on them and potentially share the proceeds of their success. Today, the Kremlin keeps a close eye on the behaviour of Russia's leading businessmen and business organisations. In many developing countries businessmen are encouraged and in some cases required to maintain links with a ruling political party.

The evolution of money-bargaining and economic theory has followed upon and stimulated the idea of individual freedom in western society. Historians recognise the seventeenth

century in England as a crucial period in the emergence of the individual freedoms of modern society. It is part of the common cultural evolutionary heritage of societies on both sides of the Atlantic, and of many other regions. Its turmoil culminated in the 'Glorious Revolution' of 1688. The Revolution restricted the power of the monarch, providing instead for a large measure of parliamentary control, and in particular increased control over government finance. Relieved of the suppression of autocrats, money-bargaining could expand. The individual interest could also be expressed and advanced through theory making. In the late eighteenth century Adam Smith produced his great testimonial to the material benefits of individual freedom from the constraints of government. Theories of individual freedom were enhanced and enshrined in the Constitution of the United States.

In the nineteenth century the business interests emerging in an era of industrial advance came to see the threat to individual freedom, and the freedom to engage in business, as coming not so much from any immediately ascendant group but from the prospect of greater engagement of the great mass of the population in government. The grievances of people deriving from the dislocations of industrial advance were evident. Their potential for government, by revolution or by constitutional reform, was also apparent. Karl Marx provided theory tailored to assemble support for the group interest. Theorists on the right responded with the formulation of neoclassical economic theory, presenting in severely rational terms the advantages of leaving business activities to individuals without interference from governments.

Neoclassical theory has formed ever since a major theoretical bulwark against the theories supportive of the group interest. Friedrich Hayek and Milton Friedman were called to the support of Margaret Thatcher when she was Prime Minister in Britain in the 1980s. The fact that these theories were well-supported in the academic community meant that it would be easier to assemble support for measures based on them in the political sphere. The contributions of theory makers to the ascendancy of political groups do not go unrecognised. Frederic Lee, in a study of the research assessment process in British universities (2007, p. 322) notes that the process of evaluating performance of British universities was developed in such a way as to reinforce the dominance of "...the pro-market ideology adopted by the Thatcher, Major and Blair administrations since 1980...". The paper shows how an ascendant theory group can use its ascendancy to ensure that official evaluations generate support for its continued ascendancy.

Neoclassical theory has evolved substantially since its initial development in the later nineteenth century. It has sought to keep abreast of emerging concerns through such innovatory additions to the basic model as 'asymmetric information', 'rational expectations', 'economic rent' and 'market failure'. Perhaps its greatest innovation was that introduced by John Maynard Keynes in reaction to the manifest inadequacy of the existing theory to explain the severe economic depression of the 1930s. A functioning neoclassical economic system could not countenance any unemployed resources, so the situation in the 1930s presented a fundamental challenge to the theory. Keynes modified the theory in a way that gained the major objective of re-establishing neoclassical theory as a supportable understanding of the functioning of an economy, whilst sacrificing only so much of the theory as was absolutely necessary to gain this major prize. It was accepted that the financial sector did not follow the simple market processes that the model defined.

There are, nevertheless, certain rigidities in neoclassical theory that prevent its rapid or easy evolution. It is a mathematical construction, and mathematics is understood as timeless. By

analogy with physics, if something is mathematically demonstrated, then it takes on the status of the law of gravity. It cannot be questioned, far less changed. Neoclassical theorists evaded the obvious objection to this understanding of the status of mathematics by establishing that the assumptions underlying neoclassical theory are of no account. Milton Friedman's (1953) famous methodological essay claimed that unrealistic assumptions were of no concern. What proved or disproved the validity of a theory was its capacity to predict. And it was claimed that neoclassical theory could predict outcomes, and could therefore be regarded as valid. The paper has been highly influential. Daniel [Hausman](#) (2008), in an article in the Stanford Encyclopaedia on economic methodology, comments that, "This essay has had an enormous influence, far more than any other work on methodology".

The other factor which makes neoclassical theory slow to evolve is its heavy institutionalisation. Neoclassical theory has become, around the world, the mainstay of university instruction in economics. Frederic Lee's (2007) paper makes it clear that in many British universities 'economic theory' is still 'neoclassical economic theory.' Important institutional career interests have become bound up with the maintenance of neoclassical theory.

The previous big crisis for neoclassical theory emerged in the face of extensive unemployment in the 1930s and, as suggested above, was resolved by Keynes. Many would say there is now another big crisis for neoclassical theory in the general failure of neoclassical economists to predict the financial crisis of the last five years. If neoclassical theory is so good at predicting, how come it did not save us from the near-meltdown of the recent period?

Economic theory, risk management and the unexplained residual

This, of course, is where economic theory meets financial risk management. After the failure of neoclassical theory, what can the idea of support-bargaining and money-bargaining tell us about the financial failures of the recent past?

The relationship between support-bargaining and risk management is very close. Psychologically, it is hard to distinguish between insecurity and uncertainty. The distinction is more semantic – uncertainty is more a matter of intellect and understanding. Uncertainty is intellectual insecurity. So straight away, risk management is going to involve support-bargaining. The sense of insecurity will cause everyone engaged in risk management to look to their associates for resolution of the uncertainties. Groups will be formed within which uncertainties are allayed.

Douglass North notes in *Understanding the Process of Economic Change* (2005, p. 14), that economists have displayed a good deal of ambiguity over uncertainty. For neoclassical economists, the default situation is certainty. All relevant information is known in the neoclassical model. So to protect the model, uncertainty has to be an unusual condition. North notes that uncertainty is not an unusual condition, but rather the normal situation. He (2005, pp. 23-4) notes that, "The tendency of economists to carry over the rationality assumption in undiluted form to more complex issues involving uncertainty has been a roadblock to improving our understanding of the human landscape". In the context of financial risk management, where uncertainty is of such prominent importance, the retention of an undiluted concept of rationality clearly constitutes major misconception.

North argues that in response to uncertainty, in order to reduce uncertainty, humans construct rules. The New Institutional case is that these rules constitute the institutions that structure the human environment to make it more predictable, and hence more tolerable. (We move here from the idea of 'institutions' as permanent, or at least durable, public organisations, as referred to above, to the idea of 'institutions' as systems of rules.) The question then arises, as North puts it (2005, p. 15), "...who makes the rules and for whom and what are their objectives... one of the major puzzles to be explained is how and under what conditions, humans create the conditions that make for markets with low costs of transacting and increasing material well-being".

Support-bargaining provides the answers. The rules, the institutions, are the creations of support-bargaining. It has already been seen that support-bargaining created money, which is regarded by institutionalists as an institution. It has been seen also that money-bargaining derives from support-bargaining. All the associated rules and regulations that govern money-bargaining may also be understood as outcomes of support-bargaining. Regulations regarding opening hours of shops, conditions of employment, fulfilment of contractual agreements, liability for damage, quality of goods, representation of goods, provision of information about products, procedures for the establishment of businesses, constraints on monopoly, and so on, are all outcomes of support-bargaining.

Support-bargaining in fact goes much farther than explaining the institutions of Douglass North. North (2005, p. 14) sees institutions as rational responses to uncertainty. The rules are constructed so as to reduce the flexibility of choice in the face of uncertainty. But he remarks (pp. 15-16), "Throughout human history there has always been a large residual that defied rational explanation – a residual to be explained partly by non-rational explanations embodied in witchcraft, magic, religions; partly by more prosaic non-rational behaviour characterized by dogmas, prejudices, 'half-baked' theories". All these too are outcomes of support-bargaining. In the face of uncertainty, humans create theories that explain the phenomena they observe. They create theories of gods and goddesses, the behaviour of planetary bodies and the behaviour of humans. The important point about such theories is not that they describe in a scientific sense the observed phenomena, but that they generate communal support. Communal support reduces uncertainty.

So it is with risk management. In the face of uncertainty we generate theories through support-bargaining. Financial risk managers have followed neoclassical economists in relying on mathematical modelling to reduce and even eliminate risk. As noted above, on the analogy with physics, mathematics defines what is and what is not true, beyond uncertainty. Risk management has depended heavily on mathematical formulations that purport to cover the probabilities of this or that occurrence. The community has agreed that mathematics will resolve its uncertainties.

Marc Groz's (2004) presentation on 'Risk and Other Dark Matters' makes some valuable observations on this faith in mathematical formulations. The second and third paragraphs (p. 1, original emphasis) run as follows:

My title for this talk is 'Risk and Other Dark Matters.' To me, risk is too dark a concept to be illuminated by light metaphors alone. I think of it as something that hides in the dark, like the so-called dark matter of the universe, which along with an even more mysterious dark energy, is said to account for more than 90% of the mass of the universe. What we see is a sliver of what is there. So with many forms of risk. Yet in

each case, we can infer existence of hidden complexity from the behaviour of what is visible.

When I think about the many guises assumed by risk in our business, I have to admit that neither transparency nor translucency spring to mind. Murk is more like it. Risk is a complex, murky thing, hard to see, harder still to grasp. Risk management is a phrase hovering uncomfortably close to hubris. Sort of like the phrase 'portfolio optimization' which seems far too optimistic a goal for a branch of the dismal science.

Like Douglass North, Groz finds a large unexplained residual, a hidden complexity, in the approaches adopted to risk management. He implies also the existence of a large unexplained residual in economic theory. 90% of the mass of the universe escapes us, and by implication a similar proportion of the process of risk management is lost to our view. My suggestion is that the residual is the process of support-bargaining. It constitutes the hidden process of risk management. To manage risk, you talk with your colleagues and determine what can be agreed among you as the proper way to manage risk. In earlier periods risk was managed through attention to the entrails of goats or the alignment of the planets. Today it has been agreed that in large measure the way to manage risk is to create mathematical models linking what are understood to be the critical factors. Underlying both techniques is the assurance gained by the support of those involved for the techniques adopted.

Groz made his presentation in 2004, well before the mathematics came truly unstuck in the recent crisis. Without that event, it would be more difficult to criticise the mathematical approach. Prior to the crisis, the financial sector seemed confident that the mathematical formulations had taken much of the risk out of risk management. Groz (2004) comments that "The fantasy of the riskless strategy dies hard". If the strategies continuously pay off, it becomes more and more difficult to recognise the possibility that their foundations might be fantastical.

Security in the herd

The security inherent in support means that humans are inclined to congregate in groups. In colloquial terms, it means humans have a 'herd instinct'. The term is commonly used to describe the destabilising effects of sudden movements in human opinion and commitment, as when a herd stampedes. Or it may describe the adhesion of people to groups and ideas that seem to have little attraction, even little relevance to their interests, other than being a source of reassurance. In the financial world, the 'herd instinct' is well attested. Stock prices move not just by reference to the expectations of financial returns from the stock based on trading prospects, but from the recognition that many people expect the stock to move up or down. So stock prices can climb to great heights because people bid them up on the expectation that others will bid them higher. Then a recognised herd leader begins to sell; or some event, or some release of information, makes it clear that the trading prospects of companies do not justify their stock valuations; and expectations are revised. The stock price heads in the other direction as people sell in anticipation that the price will fall further as others sell.

The changes are dictated by the pursuit of support. There is support and security in doing what others do, in following group opinion. People express their support for group opinion through purchase of the stock when the group thinks it will rise, and through sale of the stock when the group thinks it will fall. People have confidence that they are doing the right thing

when they do what everyone else is doing. An individual is generally secure from blame if following the group leads to trouble, because the group will sit in judgement, and is likely to exonerate itself and those who followed it. Those who act in accordance with group opinion can expect the continued support of the group.

If financial risk is to be successfully managed, it is necessary to incorporate in the process an account of the effects of support-bargaining on stock prices. People feel more secure when they move with a group, but the feeling of security arises from the sense of support from the group, rather than from any necessary capacity of the group to assess true values. There are, of course, real difficulties in modelling the influence of support-bargaining in quantitative terms; which means there are real difficulties in modelling the behaviour of stock markets in quantitative terms. More than that, as suggested earlier, the elevation of quantitative modelling itself to a decisive role is an outcome of support-bargaining and is itself likely to involve the instinct for security within the group.

Valuation and Support

The herd effect, or the high intensity of support-bargaining, involved with the present crisis was particularly marked because many of the securities whose values became inflated and then collapsed were particularly obscure with regard to their real economic value. They were packages of different obligations, with debts relating to sub-prime mortgages somewhere in the mix, which in the end proved particularly toxic. Very few people can possibly have worked out the real trading value of these securities. In the face of such uncertainty over their value, people inevitably resort to support-bargaining. They depend on others to confirm that they are fairly priced. They believe with everyone else that mathematical techniques are appropriate and have been properly used in pricing the securities on offer. They believe the ratings given by the organisations established to evaluate the status of debt. It is, of course, potentially advantageous to some to be selling securities whose value depends to a high degree on the support accorded them, with no searching questions asked about their underlying value deriving from the real economy. Securities are designed to attract support in the support-bargaining of the financial community, and by attracting support, also attract buyers. Tony Lawson published a paper in the *Cambridge Journal of Economics* titled 'The current economic crisis: its nature and the course of academic economics (2009)'. In it (p. 772), he remarks of collateralised debt obligations that:

They were perceived as relatively safe because, as noted, the rating agencies gave them a high rating. But in truth, the products so bundled came from hundreds of thousands of unidentifiable sources, and their credit worthiness and cash flow possibilities could not be determined. Being more or less completely opaque to those who bought them, and seemingly often intentionally so, they were, at best, highly risky and in fact extremely precarious.

The financial community generated support for these securities and took out the uncertainty, or insecurity, that should properly have surrounded them. It tried to realise its fantasy of risk-free investment by using support-bargaining to eliminate uncertainty. The matter came to a head in late 2007 when one of the leading banks, BNP Paribas, recognised that it could not reliably value some of its funds and suspended trading in those funds. The whole herd then reappraised its position, tried to offload the newly questionable securities, and found itself caught in a financial crisis.

The shock was no doubt the greater because the herd had been moving very confidently in the months preceding the financial crisis. Regulators and investors alike were caught up with the idea that the booming markets were not bubbles, because mathematical analysts had resolved the problems of pricing stock. This time, things were different. Daniel [Hausman](#) (2008), in the paper mentioned above, written before the crisis, and otherwise deeply critical of economic methodology, thought himself obliged to concede that, "...contemporary economists are much better at pricing stock options than economists were even a generation ago". As Groz (2004, p. 1) puts it, risk management was hovering close to hubris.

Lawson's (2009) account of the problems of neoclassical theory focusses on the use of mathematical deductive modelling. He argues (p. 766) that the assumptions commonly required as the foundation for such deductive modelling are far too restrictive to make the conclusions of such analysis relevant for any practical purposes. In academia, such analysis is fundamental (p. 775) "...for research recognition, academic appointments, promotions and everything else" – the effects of institutionalisation of theory are apparent. But outside the confines of academia it has little relevance. It does not give a plausible account of how economic systems actually function. It was seen earlier that, as far as neoclassical economists are concerned, the problem of unrealistic assumptions was side-lined by Milton Friedman's methodological essay emphasising the importance of prediction and the irrelevance of assumptions.

The influence of neoclassical commitment to modelling and Friedman's methodological principles are apparent in the mathematics of financial risk assessment. The Capital Asset Pricing Model developed by William Sharpe (1964) and others seems to depend on the irrelevance of assumptions. Lawson (2009, p. 767) records Sharpe's admission that the inputs required to generate his conclusion are:

...highly restrictive and undoubtedly unrealistic assumptions. However, since the proper test of a theory is not the realism of its assumptions, but the acceptability of its implications, and since these assumptions imply equilibrium conditions which form a major part of classical financial doctrine, it is far from clear that the formulation should be rejected. (Sharpe, 1964, p. 434)

In other words, since the proposed model confirms established theory, the basis in unrealistic assumptions constitutes no reason for rejection of the model. Sharpe loosens even Friedman's criterion for the validity of a theory – the accuracy of its predictions – by adopting 'the acceptability of its implications'. It appears that the Capital Asset Pricing Model was adopted within the financial community to dispel the uncertainty surrounding the pricing of capital assets, but it rests not just on uncertain assumptions, but on assumptions that are known to be false. It is a good example of the way group support can sustain ideas that are convenient to the group regardless of the foundation of such ideas. It is a good illustration also of the way in which conclusions of mathematical analysis, if they are convenient, are taken up while the dubious foundations of the analysis are forgotten. More broadly, it illustrates the process of theory formation through support-bargaining that has created and sustained the ascendancy of neoclassical economic theory. In this case, the toxin of neoclassical methodology has been allowed to seep into financial risk management.

Lawson (2009, p. 760, p. 775) argues that mathematical deductive modelling should not be abandoned, but that its importance in economics faculties should be diminished, leaving scope for consideration of broader approaches. Scholars should seek an understanding of the

social order as a basis for understanding of economic and financial processes. He remarks (p. 765) that, "The network of accepted social positions and associated rights and obligations coordinates social life". He is clearly close to Douglass North's institutional concept of society and North's 'unexplained residuals'. He is concerned with the same 'hidden complexity', or 'dark matter', identified by Groz (2004, p. 1) in financial risk management. He reflects also the strictures made above on the possibilities of effectively modelling financial risk.

The obscurities arise because there is no understanding of support-bargaining. Because uncertainty and risk are so prominent in financial markets, it is to be expected that there will be a particularly high intensity of support-bargaining, because support-bargaining is the reaction of humans to uncertainty and insecurity. The way those engaged in financial markets group together spatially, in 'the square mile' and on Wall Street, is an indicator of the importance of support-bargaining in its most personalised forms. The development of electronic communications has facilitated support-bargaining in relation to financial markets on a global scale in less personalised forms. Support-bargaining is a natural human reaction to uncertainty and insecurity, so it is unlikely to be eliminated entirely from the management of financial uncertainties. But an understanding of its dynamics applied in the formulation of policies and practices relating to the management of financial risk will potentially reduce its adverse effects.

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More on why we should bury the neoclassical theory of the return on capital: a supplementary note

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Introduction

This note is intended as, in effect, an appendix to the author's recent paper on the deficiencies of the marginal productivity theory of the return on capital². A little extra explanation together with a simple numerical model may help to elucidate matters discussed in that paper. Much was made of the dependence, in the case of a surplus-producing economy, of equilibrium relative values on distribution; there was a passing reference to the "reswitching" phenomenon. For people to see more clearly how such phenomena come about, and appreciate that, however strange they may appear from a neoclassical standpoint, these are entirely natural elements of a classical conception ("classical" meaning in the tradition of Smith, Ricardo and Marx), would be no bad thing.

The background: the differing neoclassical and classical conceptions

In neoclassical or marginalist theory the relative values of goods and services are interpreted as "indices of scarcity" reflecting the balance of demand and supply in the various markets of the economy. This explanation comprehends, along with other values, the prices of "factor services" – i.e. the wages of labour and the rate of interest on capital.³ These rewards are understood to correspond to the value of the marginal contributions of the factors concerned – that is, to the utility to the consumer of the marginal unit of consumption and to the contribution to production of the marginal worker or marginal unit of capital.

It is this marginalist approach to the theory of distribution that is undermined by the critique – particularly associated with the name of Piero Sraffa – which has been developed in recent years from the old classical perspective. The marginalist analysis was originally constructed to explain consumer behaviour in a context of pure exchange, and, despite subsequent elaboration, authors working in terms of the marginalist paradigm failed to achieve a satisfactory application of their approach to the real world conditions of a surplus-producing economic system. Any real economy *is* a surplus-producing system which, over and above reproducing the producers' goods being used up in the production process, supplies additional (i.e. surplus) output which maintains not only the workforce but also the rest of the community, and which, beyond that, may go to capital accumulation, luxury consumption, or other use⁴. The neoclassical analysis remains grounded in a fairy tale world of exchange and

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² Grieve (2012); see also Moseley (2012).

³ Neoclassical theory frequently focusses on *interest* as the reward to capital, leaving *profit* and its determination neglected in the background.

⁴ Surplus output may be defined in alternative ways. The old classical economists viewed the surplus as consisting of the output available for general use after all inputs, *including the maintenance of the labour force*, had been replaced from current output: the wage bill thus counted as a cost rather than as part of the surplus. With reference however to modern conditions when it is not easy to identify what might be considered the necessary subsistence of the workforce, it is preferable to treat the output going to

consumption without getting to grips with the properties of an economic system in which inputs are themselves products of the system, rather than manna from heaven or flotsam picked up on the beach of a desert island.

Neoclassical theorists, generally ignorant of the classical conception of production with a surplus⁵, gave no consideration whatever to the fact (of high theoretical importance) that – at least *conceptually* – the surplus product may be divided in different proportions between competing claimants – as between labour and capital. (If wages are increased profits fall, and vice versa.) With respect to the theory of value, the significant implication – appreciated by Smith, Ricardo and Marx – of differences in distributive shares is that equilibrium relative values are affected by the division of the surplus. Other things being equal, relative values will differ according to the rates of wages and profits established. (From a classical angle, it is understood that whatever distribution actually obtains is determined not by factor contributions to production – but may be taken to reflect instead the bargaining power possessed by the rival claimants to shares in net output.)

Equilibrium relative values and the distribution of the surplus

Let us try to explain – as simply as possible – why equilibrium values depend on distribution. As this is a phenomenon completely beyond the neoclassical horizon, it is necessary to investigate the issue from a classical perspective: we employ a very basic Sraffa-type model. In the economic system envisaged production is understood to take place period by period, output in each period not only replacing (for use in the following period) the output used up in the current period, but producing a net surplus over current usage.

The equilibrium values of the commodities produced must cover the costs incurred in their production, these comprising expenditures on material inputs, on labour and, in addition, a necessary margin of profit, at whatever is the going rate, must be included. Profit is calculated as a mark-up on the outlay (investment cost) on materials⁶. In a given situation these prices are such as to effect a particular division of the surplus between wages and profits.

To reveal fully the nature of these costs of production, Sraffa (1960, Chapter IV) introduces the analytical procedure of “reducing material inputs to dated labour inputs”. He notes that material inputs at any particular time are themselves the product, in a previous period of time, of material *and* labour inputs. The point of the procedure is that, by tracing input usage backwards through time, a part of the material element can be progressively replaced as an input component by the earlier labour input which had gone into the production of that material. Thus, by going far enough back in listing the resources used directly and indirectly in the production of a commodity, material inputs come to be replaced by the earlier labour inputs used in producing these materials, so that, eventually, with the material element

wages, along with other income shares, as an element of the surplus. That is the convention we adopt in this discussion. That being so, the surplus can therefore be understood as corresponding to the familiar concept of net national income.

⁵ While neoclassical economists typically appear to have had no notion of the concept of surplus production, Walras did attempt to bring the phenomenon into his general equilibrium system, but failed to provide a successful treatment; Pareto, his close follower, realized that Walras had got himself into a muddle, and dropped the surplus concept completely from his analysis.

⁶ For the sake of simplicity, investment is understood to take the form only of working capital, fixed capital not appearing in the system.

virtually eliminated, we are left with a series of “dated labour inputs” as representing the inputs used over time in producing the commodity in question.

The cost of production of a commodity may thus be interpreted as corresponding to the present value of a particular set of dated labour inputs. In calculating this cost account must be taken not only of direct outlays on wages, but also of the fact that with labour inputs entering into the production of material inputs, the subsequent utilisation of these materials adds a profit mark-up to the labour costs previously incurred. Note that, with compound interest, the impact of the profit factor on the present value depends on the date of application to production of a particular labour input. The present value of the set of dated labour inputs thus depends on the quantity of labour, the date of employment, the rate of wages paid and the going rate of profit.

The present value of each individual dated labour input is represented by the equation $(L_t w)(1 + r)^n$ where L indicates the number of workers, t the date of application of that labour, w the wage rate and n is the compounding factor corresponding to that date. Formally then, the cost of production / equilibrium value p_x of commodity x , made up of the sum of the present values of the several dated labour terms, may be expressed thus:

$$p_x = L_t w + L_{t-1} w(1 + r) + L_{t-2} w(1 + r)^2 + L_{t-3} w(1 + r)^3 \dots L_{t-n} w(1 + r)^n$$

The present values of the elements of any such series of dated labour terms, and hence the values of the commodities to the production of which they relate, are subject to significant variation according to the particular rates of profit and wages specified. Sraffa (1960, Chapter VI) provides some dramatic examples of the effects of different divisions of the surplus on the values of commodities.

Surplus production and relative values: an illustration

We now introduce a very simple model of a surplus producing economic system. Despite its simplicity it can be used to illustrate phenomena characteristic of such a system, phenomena unrecognized in neoclassical theory.

Our model economy is comprised of a capital goods industry and a consumption goods industry, and produces and uses two commodities, a capital good (k) and a consumer good (c). Capital goods are the “basics” of the system – they are required in the production both of consumption goods and of the capital goods themselves. Our model should be read as being of an elementary input-output system. The structure of the system is shown below (Table 1). p_k and p_c (costs of production / equilibrium values) are the prices of goods k and c respectively; w is the real wage rate (in quantities of c); r the rate of profit, and L quantity of labour (number of workers).

Table 1: structure of the system

| | Physical relationships: | Value relationships: |
|-----------------------------|-------------------------|--------------------------------|
| Capital goods industry: | 60k + 75L produce 105k | $60p_k (1 + r) + 75w = 105p_k$ |
| Consumption goods industry: | 45k + 25L produce 220c | $45p_k (1 + r) + 25w = 220p_c$ |
| Whole system: | 105k + 100L | (net output / surplus = 220c) |

The surplus produced is purely in the form of c goods. The k goods produced during each period of time are applied to production in the following period to replace current usage of such goods. The surplus may, in principle, be distributed in different proportions as wages or profits between the rival claimants. Table 2 shows the distributional possibilities in terms of commodity c.

Table 2: profit and wage possibilities

| Profit share (in units of c) | Wage share |
|---------------------------------|------------|
| 0 | 220 |
| 20 | 200 |
| 60 | 160 |
| 100 | 120 |
| 140 | 80 |
| 180 | 40 |
| 220 | 0 |

Different divisions of the surplus imply different rates of profit and different equilibrium values. The range of profit rates technically feasible in the case of the system modeled can be determined by resort to the notional⁷ “standard system”, which, representing the technical core of the actual system, reveals the profit-yielding properties of that system. The standard system corresponding to our model economy is

$$80k + 100L \text{ produce } 140k; \text{ maximum } r \text{ when } w = 0 \text{ is } 60k/80k = 75\%.$$

The range of profits possible with our actual system is accordingly 0% – 75% (profits zero/wages at maximum – profits maximum share/wages zero).

Let us now see how in the case of our model system the relative values of commodities k and c differ according to the division of the surplus⁸. As explained above, relative values

⁷ Logically, such a system is embedded within any actual system. See Sraffa (1960), Chapter IV.

⁸ We are not necessarily supposing that such distributional changes are actually occurring. These exercises are in the nature of “thought experiments” intended to reveal what underlies the state of the economy as we see it.

correspond to the present values of the dated labour stream to which the costs of production of each commodity can be reduced. The values of the dated labour streams for commodities k and c are shown below:

For one unit of k:

$$0.714L_t w + 0.408L_{t-1} w(1+r) + 0.233L_{t-2} w(1+r)^2 + 0.133L_{t-3} w(1+r)^3 + 0.076L_{t-4} w(1+r)^4 + 0.043L_{t-5} w(1+r)^5 + 0.025L_{t-6} w(1+r)^6 \dots 0.00L_{t-16} w(1+r)^{16} \dots ;$$

and for one unit of c:

$$0.114L_t w + 0.146L_{t-1} w(1+r) + 0.084L_{t-2} w(1+r)^2 + 0.048L_{t-3} w(1+r)^3 + 0.027L_{t-4} w(1+r)^4 + 0.016L_{t-5} w(1+r)^5 + 0.009L_{t-6} w(1+r)^6 \dots$$

If, for each commodity, we trace these dated labour streams right back, period by period, until the inputs become of negligible magnitude, we should find that the total labour input, summing labour usage over all the dated labour terms, approximates to 1.667L and per unit of output by industry k and 0.450L per unit of output by industry c. When the rate of profit is zero, and costs reduce simply to labour costs, these numbers, multiplied by the wage rate, represent the unit costs of output in the respective industries. In this instance relative values are proportional to "labour embodied"; however, that relationship holds only when all output goes to the workforce: when owners take a share the proportionality between quantities of labour inputs and relative values disappears.

Given the range of values of r possible in our model system, the corresponding values of each commodity may, for any r, be calculated.

Sets of relative values of p_k and p_c corresponding to various values of r, are reported in Table 3. These values are quoted in terms of wage-units – i.e. the going wage is taken as the numeraire, and used under all circumstances. (Incidentally, both Adam Smith "labour commanded") and Maynard Keynes favoured the wage-unit as a standard of value.)

Table 3: relative values

| r | p_k | p_c | w | p_c/p_k |
|----|-------|-------|---|-----------|
| 0 | 1.67 | 0.45 | 1 | 0.27 |
| 10 | 1.92 | 0.54 | 1 | 0.28 |
| 20 | 2.27 | 0.68 | 1 | 0.30 |
| 30 | 2.78 | 0.86 | 1 | 0.31 |
| 40 | 3.57 | 1.14 | 1 | 0.32 |
| 50 | 5.00 | 1.65 | 1 | 0.33 |
| 60 | 8.33 | 2.83 | 1 | 0.34 |

Our model thus captures a phenomenon overlooked in neoclassical theory, the dependence of equilibrium values on the division of the surplus. The relative values of goods k and c do vary, if not to a dramatic extent, but what is particularly interesting is how the value of the capital good, (and consequently, the value of the capital stock, when measured in wage-units, does vary dramatically according to the distribution of the surplus (see Table 4). It may be noted that if, alternatively, a unit of good c (representing a basket of consumption goods) is taken as the numeraire, the value of the stock of k goods used in production is again seen to vary with distribution - but in a different direction, falling rather than rising with increases in r! *It is evident that a given stock of real capital equipment does not have a unique value independent of the return on capital.*

The value of capital per worker across the economy varies with altered rates of wages and profits as shown in Table 4. Columns 2 and 4 indicate that the “quantity of capital” installed in this economy, when measured in value terms, varies significantly according to distribution of the surplus (and according to the standard chosen). Measuring values in wage-units, the system is apparently operating with a higher capital-labour ratio when wages are low than when they are high, but when commodity c is taken as the standard of value, the ratio rises as wages rise. But, of course, regardless of the different values of capital under different circumstances, the stock of real capital is exactly the same in its physical form and properties.

Table 4: value of capital installed

| r | value of capital stock ($105k \times p_k$) / w (in wage-units) | value of capital per unit of L (in wage-units) | value of capital stock ($105k \times p_k$) / p_c (c as numeraire) | value of capital per unit of L (c as numeraire) |
|----|--|--|---|---|
| 0 | 175 | 1.75 | 390 | 3.90 |
| 10 | 202 | 2.02 | 374 | 3.74 |
| 20 | 238 | 2.38 | 351 | 3.51 |
| 30 | 292 | 2.92 | 339 | 3.39 |
| 40 | 375 | 3.75 | 329 | 3.29 |
| 50 | 525 | 5.25 | 318 | 3.18 |
| 60 | 875 | 8.75 | 309 | 3.09 |

We see therefore that produced capital goods take on different relative values according to how the surplus is distributed. That that is so creates a serious difficulty for the neoclassical theory of distribution which, as we know, attempts to explain the return on capital (the value of r) by reference to the quantity of capital measured in value terms. But, as illustrated in Table 4, *unless a particular value of r has been specified, the value of capital is indeterminate*. Consequently, the impasse facing the neoclassical theorist seeking to account for the value of r is that while it is essential to know the value of the existing stock of capital, a unique value can be attached to that set of real items only when the answer to the question being asked is known. *This state of affairs leaves the neoclassical theory of distribution in an impossible situation.*

Reswitching

The principle purpose of this exercise has been to demonstrate how, in the case of a surplus-producing economic system, the value of real capital goods is not independent of the distribution of the surplus, a fact which undermines the neoclassical explanation of the return on capital in terms of the abundance or scarcity of the existing stock of capital. Having achieved our initial objective, let us extend this explanatory exercise a step further by demonstrating how the dependence of values on distribution gives rise to the phenomenon – paradoxical from the neoclassical perspective – known in the literature as “reswitching”.

Reswitching relates to choice of production technique. Neoclassical theory supposes the existence of a regular relationship between relative abundance or scarcity of factors, low or high factor prices and the factor intensity of technique chosen. Thus the expectation would be

that, in moving between economies with different resource “endowments”⁹, we would find labour-intensive techniques in use in a labour- abundant, low wage economy (economy A), capital-intensive methods being employed where capital was plentiful and labour relatively scarce and dear (economy C), and “in-between” techniques favoured in economy B, where labour was less scarce than in C, but capital more abundant than in A. What we would not expect to see would be that a technique adopted as appropriate to conditions in A, and rejected in B as unsuitable, is selected again as appropriate in C. This unexpected appearance of the same technique under quite different economic conditions is what is referred to as “reswitching”.¹⁰ Imagine an entrepreneur transferring his operations from economy A to economy B and in doing so switching from a labour intensive technology to a more capital intensive one, but, in making a further move to economy C, switching back to the technology which had been used in economy A. From a neoclassical perspective that would seem very odd – how could a technique appropriate to a low wage, high interest economy become optimal in a high wage, low interest one?

To model the circumstances under which this could happen, we introduce alongside the simple model system with which we have been working, another similar system (call it “system 2”). See Table 5 for the specification of that system. It is similar in structure to our previous model economy (“system 1”) in that it consists of a capital goods sector together with a consumer goods sector; we suppose that the consumer good is the same good *c* as produced in system 1, but that the capital good *k'* is different in technical properties from the capital good *k* of System 1. Sets of relative values implicit in system 2 according to distribution are reported in Table 6.

We treat the two systems as constituting alternative techniques of producing commodity *c* and we suppose that entrepreneurs will chose which of the two techniques, under whatever conditions prevail, is the more profitable. (We may refer to them as “systems 1 and 2” or, alternatively, as techniques 1 and 2: no matter – here “system” and “technique” signify the same thing.)

Table 5: structure of system 2

| | |
|-------------------------|---|
| Physical relationships: | Value relationships: |
| 48k' + 40L produce 80k' | 48p _{k'} (1 + r) + 40w = 80p _{k'} |
| 32k' + 60L produce 200c | 32p _{k'} (1 + r) + 60w = 200p _c |
| 80k' + 100L | |

⁹ We are adopting Joan Robinson's procedure of supposing the different techniques of production to be employed in “isolated islands of equilibrium”.

¹⁰ As to how the reswitching issue arose, see Harman (1996).

Table 6: relative values, system 2

| | r | p_k | p_c | w | p_c/p_k |
|--|----|-------|-------|---|-----------|
| | 0 | 1.25 | 0.50 | 1 | 0.40 |
| | 10 | 1.47 | 0.56 | 1 | 0.38 |
| | 20 | 1.79 | 0.64 | 1 | 0.36 |
| | 30 | 2.27 | 0.77 | 1 | 0.34 |
| | 40 | 3.12 | 1.00 | 1 | 0.32 |
| | 50 | 5.00 | 1.50 | 1 | 0.30 |
| | 60 | 12.50 | 3.50 | 1 | 0.28 |

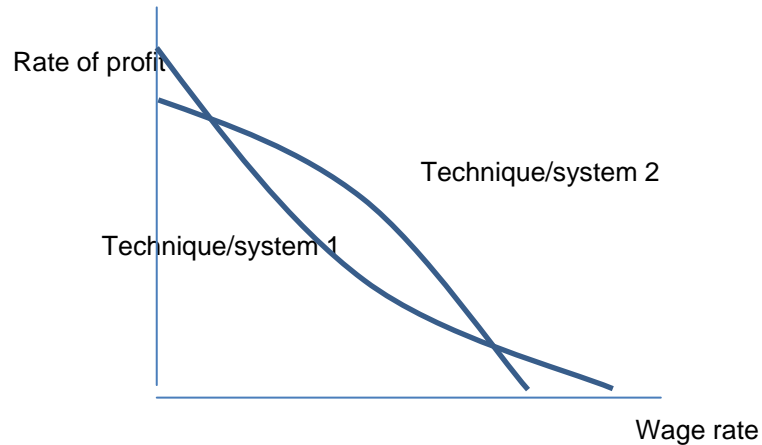
With respect to choice of technique it is relevant to compare the capital-labour ratios associated with the two techniques. Again we encounter a state of affairs unrecognised and inexplicable in a neoclassical world. Table 7 shows how the capital/labour ratios (value of equipment per worker) of the two techniques do not stay constant in relation to each other, but vary with the distribution of income. Thus we cannot say, without knowing distribution and relative values, which technique is the more “capital intensive”. At lower rates of profit 1 is more capital intensive than 2, but at high rates the situation is reversed, with the value of capital per worker higher in 2 than in 1. It is this variability in the relation to each other of the two capital/labour ratios that underlies the reswitching which, as we are about to show, can occur between the two techniques.

Table 7: capital/labour ratios

| r (%) | Capital/labour ratio technique 1 (Value of capital in wage units, per unit of labour) | Capital/labour ratio technique 2 |
|----------|---|-------------------------------------|
| 0 | 1.75 : 1 | 1 : 1 |
| 20 | 2.38 : 1 | 1.43 : 1 |
| 50 | 5.25 : 1 | 4 : 1 |
| 60 | 8.75 : 1 | 10 : 1 |

Given the availability of these alternative techniques for the production of consumer good c, entrepreneurs will select whichever technique is the more profitable under the particular conditions (with regard to distribution of the surplus) that happen to obtain. The relative profitability of the two techniques depends on the going rates of profit and wages. How their respective profitabilities vary as wage levels alter is shown in Figure 1.

Figure 1: Wage-profit frontiers



The figure depicts “wage-profit frontiers” indicating feasible wage and profit combinations associated with each technique. With these “frontiers” set against each other and the rate of profit yielded by each technique compared at various wage rates, it is evident which technique will be favoured in particular distributional situations.

Consider what these choices will be. Start with the situation that wages (in both systems) are at a very high level. Initially we find that technique 1 offers the higher rate of profit, and will therefore be the preferred method of production. At lower wages, profits will be higher in both systems, but, as wages are reduced, the rate of profit in system 2 will rise by more than that in 1, and technique 2 will accordingly come into favour. (The reason for this technological “switch” is that at high wage levels, technique 1 is more capital intensive than technique 2, implying that a given income transfer from workers to owners raises the rate of return to greater extent in 2 than in 1. Further wage reductions, over a considerable range, increase the return on capital in both systems without inducing a change in technique; but when wages fall to very low levels, another switch in technique is predicted, from 2 back to 1. Note what is happening in the case of this latter switch: as before, entrepreneurs have switched from the more capital-intensive technique to the relatively labour-intensive one, again for the reason that the given reduction in wages has a larger impact on profits in the latter than the former system.

The inexplicable oddity here from the neoclassical perspective is that the former switch from a more capital intensive to a less capital intensive one was from technique 1 to technique 2; in the latter instance the switch from a technique of higher capital intensity to one of lower capital-intensity is from technique 2 to 1. The explanation, of course, is that alteration of the relative capital intensities of the two techniques (see Table 7) has made the switch back from 2 to 1 advantageous for the same reason as was the switch from 1 to 2.

Reswitching, that is to say, occurs because of the dependence in these systems of relative values on the division of the surplus: in consequence the two techniques cannot be uniquely ranked (as in a neoclassical world they would be) in terms of capital intensity.

Conclusion

The marginalist or neoclassical theory is seen to run into difficulties in respect both of explaining the determination of the rate of return on capital and in understanding the possibilities that exist as regards choice of technique. These difficulties result from the neoclassical presumption of a constant one-to-one relationship between the *values* placed on commodities produced within the economy and the *quantities* of real physical “stuff” (measured in appropriate terms) of which they are comprised. But, a given commodity or given collection of commodities (such as a set of capital goods) has, in the real world context of production with a surplus, no unique value, independent of the division of the surplus, relative to other goods or sets of goods. The neoclassical theory is led into error by failure to appreciate that the value of a specific stock of capital goods depends on the going rate of return on capital; it is baffled by the possible implications of the fact that the ranking of techniques of production in terms of capital or labour intensity (with technical specifications unaltered) is likewise dependent on the distributional situation.

The fundamental reason for all this theoretical muddling is that the neoclassical analysis, having failed to escape from Walras’s desert island, remains applicable only to a notional exchange-and-consumption world, and necessarily finds itself in difficulty when faced with explaining the working of a real world economy characterized by production with a surplus.

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