

# CENTER ON CAPITALISM AND SOCIETY

## COLUMBIA UNIVERSITY

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### *Climate Change, the Knowledge Problem and the Good Life*

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\* This version is a re-touch of the presentation given at St James Palace, London, on Wednesday May 27, 2009. Some of the thoughts here were sketched earlier in Edmund Phelps, "How Should Economists Model the Future?" in P. A. Chiappori, J.-M. Lasry and D. Fessler, eds., *Finance & Sustainable Development*, Economica Ltd., London, 2009. Portions here draw on Saif Ammous's doctoral thesis in progress.

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“The curious task of economics is to demonstrate to me how little they know about what they imagine they can design.”  
--Friedrich Hayek

I feel honored to be invited to this distinguished meeting, especially so since my work is not centered in the area of climate – though I have done much work on the subject of intertemporal choice, which may be why I was invited.

Let me add that in the preparation of this paper I teamed up with Saifedean Ammous, a talented Ph.D student at Columbia University.

### **Knowledge Problems in Climate Policy**

This presentation will argue that we must address the challenge of climate change through the prism of what is called the *knowledge problem* and – no less important – from the perspective of the *good life*.

When discussing our society’s big problems, there is a tendency to assume that we have the knowledge we will require to act on the problem before us. And there is a tendency to presume that the intentions of our actions will translate seamlessly to the consequences. Knowledge problems are why both these assumptions can be wrong – and why they can lead to unintended outcomes, some of them disastrous.

### **INCOMPLETE KNOWLEDGE RAISES KNIGHTIAN UNCERTAINTY**

To succeed in the task of controlling climate change will generally require us to take into account that social and economic systems are involved. One trouble this involvement causes is that the behaviour – the response of the actors in such a system – are uncertain. An extreme, though admirably clear, definition of uncertainty was introduced by the American economic theorist Frank Knight in his 1921 book *Risk, Uncertainty, and Profit*.

In Knight's terms, uncertainty meant a condition in which the probabilities assigned to various contingencies and factors are *unknown* – “unmeasurable” in his terminology. Knight may have had in mind that in the social world, such as a national economy, there may have been unseen changes in conditions; so there are no time series data from which to form a reliable estimate the desired probability distribution(s). The Chinese have a probably familiar proverb underlining that: “A man in the river can never stand in the same place twice.”

But Knight may have had in mind something bigger. In recent decades it has been emphasized by a few economists that our knowledge of how the economy *works* – how things are interrelated – is bound to be “imperfect.” We cannot understand fully an economy as complex as the real-life ones we face, even work in. This problem would exist in an economy in having only a single innovator taking novel steps in the face of the unknown. It is hugely magnified by the restless experimentation and ceaseless originality occurring at present throughout the economy in the present and that occurring in the future.

#### **THE UNKNOWABILITY OF FUTURE ADVANCE**

Fifty years ago, the thought of 6.7 billion people on earth was heretical. Another fifty years before that, the idea of 3 billion people on earth looked impossible. 300 years ago, the idea of one billion people would have been unimaginable to anyone. And yet, the heretical, impossible and unimaginable all came to pass, as the earth has supported these huge numbers. It did so because humans have *invented* new resources and new ways of dealing with resources that were revolutionary and changed everything: the steam engine, fertilizers, desalination, antibiotics and immunization. All of these inventions were not only revolutionary; they were fundamentally and completely unforeseeable until they were invented. Even when they came to be invented, no one could have foreseen the incredible impact they would have on humanity. Who in their right mind could have

foreseen that a little tinkering with a pump in northern England would launch the industrial revolution that would completely change the world?

At every point in history, we are ignorant of what the future action and ingenuity of humans will bring about. It might bring about another steam engine – or a nuclear war. Or it might not. However, we can be sure there will be new discoveries as a result of restless tinkering and the occasional imagining of heretofore unconceived possibilities; and the cumulative force of these discoveries will change things. The trouble is we can never predict their arrival. If we could, they would not be discoveries. As Karl Popper remarked, “[t]o predict the wheel is to invent it.”

#### **HUMAN ACTION v. HUMAN DESIGN: DISPERSED PRIVATE KNOW-HOW**

The great philosophers of the Scottish Enlightenment made the enormously important distinction between what is of human design and that which is the product of human action yet not of human design. As Adam Ferguson put it, “Every step and every movement of the multitude, even in what are termed enlightened ages, ...nations stumble upon establishments, which are indeed the result of human action, but not the execution of any human design.” This distinction is highly applicable to the problem of climate change. Hayek developed the thesis that where knowledge is greatly specialized and therefore private and dispersed, uncoordinated human action in a society produces outcomes that are beyond what could have been imagined, let alone achieved, through the “design” imposed by a centralized system. A centralized system would be incapable of drawing upon all the knowledge and imagination that, though specialized, a decentralized system could do.

A common problem in thinking of our energy systems and climate change is the presumption that we can design our *energy systems* like we design a *car*, in order for it to give us the results we want. That pretense is a striking example of what Hayek referred to as the Fatal Conceit. Our existing energy systems are the result of countless actions by

countless individuals, producing and consuming. The end result is not, and cannot be thought of as the result of human design. To *presume* that we can design what has not been designed is to go down a road that leads sooner or later to ruin.

### **THE KNOWLEDGE PROBLEM AND DISTRIBUTIONAL CONSEQUENCES**

Another important issue raised by the knowledge problem concerns the distributional effects of environmental policies. When costs and benefits are so widely distributed and hard to quantify and measure, there is a serious fear that the impact of policies might fall disproportionately on the poor. Particularly in policy-arenas where the voices of the poor and powerless are barely represented, there is the risk that the uncertainty of complex systems would mask the fact that policies end up benefitting the rich at the expense of the poor. Biofuels also provides an example of this, as we see how biofuel policies benefited large food and agricultural corporations who received large subsidies, while hurting the poorest of the poor by raising food prices, and driving them towards starvation.

This can, for instance, be seen in issues of conservation. Conserving forests and preventing their exploitation has positive impacts for the globe as a whole, but its costs will be borne entirely by the farmers who will forego the economic benefits of exploiting the land. This can be devastating to poor farmers whose livelihoods depend on this. In this case, we can think of conservation as being a subsidy from some of the world's poorest people to the rest of the planet.

We must remain conscious that environmental policies have real costs and real effects, and that these carry distributional implications. The cost of protecting the environment from the damages inflicted mainly by the industrialized rich countries must not be borne by the poorer countries.

The value of the earth is, after all, subjective—a function of the valuation of the people on it. Environmental action carries real costs and we cannot ignore the distributional impacts of these costs by branding all the costs as being borne by humanity at large, and branding all the benefits as accruing to humanity at large.

Taking into account these “knowledge problems” is vital for thinking about climate change and climate policy. If we don’t take those problems into account, we make ourselves more vulnerable than necessary to the possibility of making serious mistakes. The work of my coauthor Saifedean Ammous on the recent biofuels policy illustrates vividly the problems that emerge when these problems are wished away.

*The biofuels policy.* Biofuels were touted by their enthusiasts as a magic bullet that would help the world avert an energy crisis, ameliorate the climate crisis, and offer an opportunity for the world's poor to escape poverty by planting valuable energy crops. In time, biofuels have proved a disaster on all of these fronts: they have certainly not helped in reducing fossil fuels consumption in any meaningful way, and they may have even increased it. Biofuels have also almost certainly led to an increase in greenhouse gas emissions and massive environmental destruction. And finally, biofuels have undoubtedly played a role in the recent escalating food crisis that has placed hundreds of millions of people under the threat of starvation.

This was not because biofuels are inherently "bad" fuels, nor is it due to some unforeseen disaster, nor any specific mistakes on the side of any specific actors. Rather, this was because the three above problems of knowledge were wished away. Biofuels policy in the US and EU presumed that we could measure with certainty what the impact of specific policies would be on carbon and the environment. It also was built on the assumption that certain technologies would be innovated and would increase efficiency. It also presumed that we could think of the energy mix of the EU and the US as something we could design, mandating how much biofuels to use, knowing what the impact would be.

In retrospect, each of these assumptions proved to be wrong. The result is massive increases in deforestation in South East Asia, species loss and increased production of costly, dirty and inefficient fuels. Also, massive government spending was wasted on all these projects and used to subsidize unproductive big farms. And political capital which could have been used for good policies has been wasted on bad policies. In time, biofuels policy ended up making worse every single one of the goals it aimed to improve. And as a response to this massive failure, we see governments forging ahead with even more of these disastrous policies.

Biofuels also provide an example of adverse distributional impacts stemming from the knowledge problem, as we see how biofuel policies benefited large food and agricultural corporations who received large subsidies, while hurting the poorest of the poor by raising food prices, and driving them towards starvation.

This experience exposes the real dangers of government action that ignores the knowledge problem. If the plans make things worse, the failures will prompt added plans.

Widening government planning and management of the economy may result – to the detriment of human happiness.

Moreover, the widening of government planning may not only come at increasing cost to human happiness. There is a danger it will increasingly supplant belief in the importance of the *individual* pursuit of happiness with belief in *state* provision of happiness.

### **Trading Off the 'Good Life' for the 'Good Earth'**

There is another perspective on programs for control of climate change – for energy, conservation, alternative energies, greenhouse gases and the other programs. In much of the advocacy for these initiatives there is the implicit suggestion that the rewards to society from the operation of business - private enterprise and competitive markets – are of a lower order compared with the rewards that the new public initiatives are intended to bring. In this view, the social entrepreneurs have arrived in time to rescue society from capitalism's entrepreneurs and financiers, who have been using available resources to cater to all those lower-order wants. More precisely, the premise seems to be that preservation of the physical world more or less as it is today -- in terms of temperature, biodiversity and so forth -- ought to be mankind's highest priority. The lower-order wants may be addressed, but the use of resources for satisfying those wants is henceforth to be constrained by the new public imperatives.

Two objections can be raised. First, without capitalism, which is our best hope for growth of productivity and maintenance of social harmony in the world, it may become more and more difficult to get on top of the environmental problems that will emerge. To arrogate science over business as the salvation of the planet is to be guided by the “scientism” that deluded so many economic leaders, from Mussolini to Stalin to

Mitterand, in the 20<sup>th</sup> century. Putting so much reliance on science to the neglect of economic dynamism proved to be a bad better.

Second, in the humanist philosophy, what is fundamental is the prospect of the "good life." The good life is a life of exploration, discovery, creativity, problem-solving, and personal growth. A humanist would say that society's establishment of economic structures that enable the good life should not take a back seat; that it would be unacceptable to sacrifice some part of the good life in order to avoid a survivable degradation of the environment. The constraint is on the other foot. The earth is the platform for human endeavor. The earth ought to be the means, not the end.

Let me elaborate. Capitalist systems – well-functioning ones at any rate – are all about ideas, experiment and imagination. They are about the innovating that goes on in business from the bottom up. These systems offer central humanist rewards: prosperity -- available work at engaging, challenging jobs -- and the fulfillment, the personal development, that come from ventures into the unknown. Moreover, because these systems draw upon the experiments and imaginings of ordinary people, the rewards tend to be spread widely – to be inclusive, not clubby, and popular, not elitist. It is reasonable to fear that a major shift of resources from private projects to *public* projects would significantly contract the opportunities and incentives for innovation in the *private* sector. Companies that come to be under government contract for these public projects would find themselves having only one client - the government - to which it could offer an innovation rather than the entire array of diverse consumers. We do not want an expansion of new public initiatives so broad that it risks having the unintended consequence of causing a significant reduction in the opportunity of ordinary people in the business sector to innovate and to flourish.

What, then, ought to our policy framework? As I see it, the “good earth” is the earth that contributes most to the good life. (Think of an inverted-U describing the

goodness of life as a function of the goodness of the earth. We want the earth that puts us at the top of the hill – at the golden mean.) We don't want "improvements" of the earth that come at the expense of the good life – to the extent we have it now.

From this same perspective of the good earth, we must keep in mind as well that this is an even more pressing issue for the citizens of the developing countries. Compromising the good life in these countries will carry more significant and devastating implications than in rich countries.

The Prince suggested at this conference that "capitalism may not be possible without saving the planet." We have suggested that saving the planet may not be possible without capitalism. We have further argued that some of the "best-laid plans:" to make improvements to the earth may have unintended consequence that put such a damper on capitalism as to cause humankind some loss of our good life. Worse, acting based on a lack of knowledge may cause a loss of our good life even while making the earth worse.