

BLINDED BY ASSUMPTIONS PRINT

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by Roger Pielke, Jr.



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In a 1991 evaluation of the usefulness of policy research Ronald Brunner wrote that “most preventable errors of policy analysis stem from the analyst’s perspective; as the analyst simplifies a problem to make it tractable for analysis and action, some important part of the relevant context is misconstrued or overlooked altogether.” Errors in policy analysis, Professor Brunner tells us, can have real-world effects. “The analytical error – what is misconstrued or overlooked – becomes apparent only in retrospect, after resources have been committed and the unintended and often adverse results start coming in.”

Policy analyses related to the mitigation of and adaptation to climate change demonstrate how an incomplete or misleading perspective can warp how we think about policy options. For instance, in early April, Tom Wigley, Chris Green, and I published a commentary in *Nature* that examined assumptions underlying scenarios of future carbon dioxide emissions, and what these assumptions imply about the level of effort needed to stabilize concentrations at some desired level in the atmosphere. These assumptions are based on expectations of future technological innovations that will result in an automatic decarbonization of the global economy, with “automatic” meaning that no specific climate policies need to focus on meeting the challenge of stabilization. Under such assumptions, future emissions of carbon dioxide are expected to increase more slowly than either the increase in the global use of energy or the growth in the size of the global economy.

Automatic technological innovation would be good news for those seeking to stabilize atmospheric concentrations of greenhouse gases. If the global economy spontaneously decarbonizes, then it reduces the magnitude of the mitigation challenge. But if carbon dioxide accumulates in the atmosphere at a faster rate than has been assumed, then the challenge of mitigation would obviously be much larger. Unfortunately, in the first decade of the 21st century the world appears to be *recarbonizing* rather than decarbonizing the global economy, contrary to the assumptions that underlie assessments of the magnitude of the mitigations challenge, including those published by the Intergovernmental Panel on Climate Change. One reason for the rapid growth in emissions is the unexpected pace of fossil fuel-intensive development in Asia, and in China in particular. Some scholars believe that the rapid pace of growth will continue for decades.

Our paper argues that we should (a) be aware of the assumptions of spontaneous technological innovation in virtually all scenarios of future emissions, and (b) also recognize that current trends are unfolding in a manner quite different than was assumed. One implication of our paper is that policy makers should consciously reflect on the full scale of the technological challenge of mitigation, rather than assuming that some large part of that challenge will be met spontaneously. Initial reactions to our paper have been interesting; with some resisting the call to critically examine earlier assumptions. One reason for this resistance is undoubtedly that political commitments are built upon the justifications in policy analyses. Calling into question policy analyses may necessitate rethinking aspects of the political debate, which is never easy, but is especially difficult in the context of the highly politicized arena of climate change.

Adaptation analyses suffer from a similar influence of assumptions on policy discussions. For example, most assessments of the potential future impact of climate changes on disaster losses begin by assuming that the climate will change while society stays exactly as it is today. This is a very useful approach for exploring the sensitivity of today’s society to changes in climate, but can be very misleading when regarded as a prediction of future climate impacts. One example of such a study is found in a 2005 report of the Association of British Insurers, which discussed the future impacts of tropical cyclones (including hurricanes) in the context of climate change. The report concluded that climate

change could result in a 65 percent increase in future losses over today's values. This sounds like a large increase, but what the report did not share with its readers is that if various projections for future population changes and economic development had been included, the increased exposure would also lead to increasing losses. And these losses would be *5 to 12 times larger* (depending on assumptions) than those resulting from the climate changes.

Across other areas of climate impacts research, such as sea level, disease, and farming, analysts routinely assume that society will not change as the climate does. This serves to magnify the effects of climate change on society, diminish the potential value of adaptive response, and completely ignore the societal factors that are the most significant drivers of future climate impacts. The effect of such assumptions of a static society has been identified in some areas; for instance, scholars have ridiculed the idea of "dumb farmers" who fail to adapt to changing climatic conditions. But familiar assumptions are hard to displace, especially in the context of a climate change policy debate that has long been tilted towards mitigation over adaptation.

The mitigation and adaptation examples cited above indicate how important it is that we be aware of the assumptions that underlie our policy analyses and also our related policy preferences. The topic of climate change is by no means unique in this regard. Consider the quantitative assumptions made in areas such as subprime mortgage risk (and plenty of other areas of finance), the number of weapons of mass destruction stored in Iraq, government budgeting, and so on. One of the most important roles that policy analysts can play - whether they work in public view or for a private enterprise -- is to bring assumptions into the open, question them, and suggest how we might think differently.

But this also means that the policy analyst may be an unwelcome participant in political debates. Questioning assumptions can also lead to questioning the policy recommendations justified by the analyses built upon those assumptions. Effective leadership will support policy analyses, even if the results might be unexpected or unwelcomed. Not all errors of policy analysis are preventable, but as Professor Brunner warns us, those that are can usually be traced to being blinded by our assumptions.

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