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What is ecological economics?

ROBERT COSTANZA MAY 11, 2010

Robert Costanza is one of the founders of a trans-disciplinary effort to understand how economics is embedded in the broader ecosystem that supports all human activity. From this perspective, he sees both limits for economic growth and opportunities to improve long-term human well-being.

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SUSTAINABILITY ECONOMICS MARKETING

Q: What is ecological economics?

Ecological economics is a trans-disciplinary field. It's not trying to be a subdiscipline of economics or a subdiscipline of ecology, but really it's a bridge across not only ecology and economics but also psychology, anthropology, archaeology, and history. That's what's necessary to get a more integrated picture of how humans have interacted with their environment in the past and how they might interact in the future. It's an attempt to look at humans embedded in their ecological life-support system, not separate from the environment. It also has some design elements, in the sense of how do we design a sustainable future? It's not just analysis of the past but applies that analysis to create something new and better.

Q: How does it differ from environmental economics?

Environmental economics is a subdiscipline of economics, so it's applying standard economic thinking to the environment. Mainstream economics, I think, is focused largely on markets and while it recognizes that there are externalities, they are external—they're out there. Ecological economics tries to study everything outside the market as well as everything inside the market and bring the two together.

Conventional economics doesn't really recognize the importance of scale—the fact that we live on a finite planet, or that the economy, as a subsystem, cannot grow indefinitely into this larger, containing system. There are some biophysical limits there. The mainstream view doesn't recognize those limits or thinks that technology can solve any resource constraint problems. It's not that we can't continue to improve the human situation. But we have to recognize that the environment creates certain limits and constraints on that, and we can define a safe operating space within which we can do the best we can.

Q: You just mentioned scale. Elsewhere you have talked about distribution and allocation as key parts of ecological economics. Could you explain those as well?

The three interrelated goals of ecological economics are sustainable scale, fair distribution, and efficient allocation. All three of these contribute to human well-being and sustainability.

Distribution has many different impacts, not the least of which is its impact on social capital and on quality of life. We find that if the distribution of income is too big, that creates competing groups within society. You lose cooperation. There is actually research to show that more unequal societies are less productive in the end because they spend a lot of their energy trying to maintain that gap. So distribution has a lot of direct and indirect feedbacks on how the society is actually functioning that the conventional view tends to ignore. It just focuses on having more, the idea being that the more we have the more we can spread around. But I think we're getting into a time where we have to worry about distribution. We may not always have more to spread around.

Allocation is important within mainstream economics. But to think that the market is efficient at allocating resources requires a long list of assumptions that are seeming less and less realistic—not the least of which being that there has to be no externalities. We're finding that the natural and social externalities are actually larger than the internalities of what's going on in the market. In that situation, you can't expect the market to efficiently allocate resources.

How do we fix that? Well, part of it is internalizing those externalities—pricing carbon, pricing impacts on other natural resources and ecosystem services. I'm involved with a company called Trucost that works on just that, quantifying the external environmental cost of a company and using that information to inform investors and the companies themselves about how they can reduce their external cost.

Q: You mentioned natural and social externalities. What is a social externality?

Maybe the simplest example would be the run-up of house sizes and house expenses that led to the housing bubble. Why do people think they need a bigger house? It's not because they really need a bigger house to satisfy their housing needs. It's only a status need. Other people in their peer group have a bigger house. It's really an arms race that drives this phenomenon. And arms races are not really socially productive. They just consume resources.

That's a social externality: someone getting a bigger house causes other people to think they need one. They buy houses that are outside their price range, for example, and over-extend themselves, and have to work harder in order to pay off the mortgage. And, actually, their quality of life suffers rather than improves by having this larger house.

Robert Frank, an economist from Cornell, offers a solution of changing the income tax rules so that we tax only consumption and not savings, and we tax consumptions at a very high, progressive rate. You could have as much income as you wanted, but if you chose to spend it on luxury goods, then you would be taxed at a very high rate. If you chose to invest it in things that are going to be socially more productive, then you wouldn't be taxed at all.

Q: With the current economic system, growth is ...

The god.

Q: So how does it look different in ecological economics?

Standard economists don't seem to understand exponential growth. Ecological economics recognizes that the economy, like any other subsystem on the planet, cannot grow forever. And if you think of an organism as an analogy, organisms grow for a period and then they stop growing. They can still continue to improve and develop, but without physically growing, because if organisms did that you'd end up with nine-billion-ton hamsters. There is a great video on this. [See the video on YouTube.]

So, in nature, things don't grow forever. If you want to tie economics back to nature, you have to recognize that the economy is going to stop growing at some point. That's not necessarily a bad thing. That's the way natural systems work. So what we need to do now is make the transition from the growth phase to the steady state; all natural systems do that. Think of a successional system in ecology. In an open field, all of the incentives in that system are to grow as fast as possible, to capture as much territory as you can as quickly as possible. And that's what we've been doing over the last several millennia. But once the field is filled up with early successional plants, they're more cooperation oriented, more steady-state. They're not going to keep growing.

What does that mean in terms of the economy? I think it means a shift away from sort of brute-force competition towards more cooperative, alliance-building, stable kinds of relationships. And if you want to translate that to the business community, it means that the cut-throat competition is probably going to come to an end, and we'll have more collaboration among the different parts of the system.

Q: For the companies and the countries that are currently benefiting from keeping externalities external, what's their motivation for going along with this?

One motivation is that they won't be able to continue along that path. I think the current recession is just one manifestation of that. We're hitting the limits of inputs like fossil fuels. When oil prices went to \$140 a barrel, it partly burst the bubble in housing. If we get back on the growth path, I think that that will just lead to another increase in oil prices, which will then cut off that growth again. We'll sort of hit the ceiling.

I don't think it's going to be possible to continue growing indefinitely, certainly not on the output side, because of the impacts on climate. This growth produces CO2 that causes melting of the ice caps and sea level rise and disruption of the weather, which affects agriculture. All of that eventually will put a ceiling on the continuous growth of the economy. We'll be forced into it if we don't take charge and do it in make a more rational kind of transition.

Q: I'm guessing carbon would be one of the key levers to internalize externalities. Are there others that people should be thinking about?

I think the mainstream has been pretty lax at even recognizing that those externalities exist, much less focusing on trying

to find ways to internalize them. I don't think we can use the market to fix the market. We have to use the government and other institutions.

Elinor Ostrom's work suggests other kinds of community institutions. Common asset trusts is one institution we might think of. Think of the atmosphere as an asset. Make it into a trust that's held so we can assign property rights to the atmosphere, but on behalf of the global community, not on behalf of private individuals. And then once we've assigned property rights, we can say anyone who damages our property is charged for that damage. And that's the legal justification for carbon taxes or a cap-and-trade system. But then we can also use those revenues to pay a dividend to all of the beneficiaries, which is everyone on Earth. That helps solve the distribution issue. We can also use revenues to enhance the asset, so investing in renewable energy and other things that reduce carbon emissions, or paying for carbon sequestration services of ecosystems.

Q: Looking at some of the businesses that are coming out related to ecosystem services, with carbon, they're globally oriented, but with watersheds, those, obviously, will forever be local...

Or at least regional.

Q: Right, so how do we have institutions at these different scales that are giving the right incentives? Does the role of a national government change?

To some extent. I think the role of the national government might be to set up and maintain these quasi-government institutions like watershed trusts, global atmospheric trusts, or ocean trusts.

Q: And what do markets look like in this system?

Markets do well dealing with goods that are rival and excludable. So you still have private goods, but they're the things that really are easy to privatize. For other things that are not rival, not excludable—like information, where the more you share it, the better it is—you need different institutions. Privatizing information doesn't really help society. It may help individuals who can prevent others from using it, but that doesn't help society, so we need to move back to more publicly funded research and free access to information.

Q: How far can win-win solutions get us?

I don't really know, but I can't see any reason to not pursue win-win solutions when we find them. But a key element of that is going back to what it is that you're actually trying to win. If your goal is to increase GDP and maximize growth, then I think that's the wrong goal. That's not really going to win. Then we're just continuing down the wrong path.

Q: What are some of the alternative measures instead of GDP?

Things like the Genuine Progress Indicator, which is not perfect but does at least try to separate the costs of growth from the benefits. And if you keep those accounts separate, you'll see that in the recent past, since 1975, we haven't actually been improving at all. Our costs have equaled our benefits, and GPI has basically leveled off since 1975, even though GDP has more than doubled.

If we switched and said that what we really wanted to improve is GPI, then there are ways we can do that without increasing GDP. In fact, GDP could decrease, and GPI could go up. We get what we measure, and if we're not measuring the right things, we are going to be getting the wrong results, too.

Q: You have said it's not a sacrifice to make this transition. It's a sacrifice not to. Could you explain that?

We're not really improving our well-being with this pursuit of infinite growth. In fact, well-being, in many places, is going down. And we're increasing the gap in income, which is affecting our social capital. So staying on the track that we're on is going to make us worse off; it's a sacrifice to stay on that track.

Interview conducted and edited by Ted O'Callahan.