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The Insider

JOSH WOLFE, EDITOR

This month's theme is about intentions, inventions and re-inventions. When it comes to good intentions, we know lots of roads are paved with them, but they can lead to unintended places. Nobody knows this better than Bjørn Lomborg, known widely as a skeptical environmentalist, once loved, then shunned by an environmental movement for his willingness to look at the facts. Stack-rank the world's problems, and the costs and benefits to solve them, and what emerges is a massive priority problem. The best and brightest, as well as lots of capital, flows

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Bjørn Lomborg: Saving The World With Reason

Bjørn Lomborg is adjunct professor at the Copenhagen Business School. He is the organizer of the Copenhagen Consensus Center, which brings together some of the world's top economists, including five Nobel laureates, to set priorities for the world. *Time* magazine named Lomborg one of the world's 100 most influential people in 2004. In 2008 he was named "one of the 50 people who could save the planet" by the *U.K. Guardian*; "one of the top 100 public intellectuals" by *Foreign Policy and Prospect* magazine; and "one of the world's 75 most influential people of the 21st century" by *Esquire*. Bjørn is also the author of *Cool It - The Skeptical Environmentalist's Guide To Global Warming*.

What was your inspiration behind the Copenhagen Consensus?

Fundamentally, I feel we all want to do good in the world, but clearly we don't spend a

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BJØRN LOMBORG



ADRIAN BOWYER

Adrian Bowyer: Making Machines That Make Themselves

Dr. Adrian Bowyer is a senior lecturer in the Mechanical Engineering Department at the University of Bath. He is a founder and director of RepRap Ltd. and the inventor of the RepRap Project—a worldwide, open source self-copying 3D printer. Dr. Bowyer joined the Mathematics Department at the

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SHIRL PENNEY & TODD THOMSON

Shirl Penney & Todd Thomson: Empowering Advisors With Tech

Shirl Penney is the founder of Dynasty Financial Partners and serves as president and CEO. He is formerly director of business development for Global Wealth Advisory Services at Citi Smith Barney and previously served as head of executive Financial Services and

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whole lot of money on doing good. One salient fact related to this point is that you can actually save an average African life for about \$63 dollars a year. That's less than what most of us probably spend on a pair of jeans! So I simply set out to ask, "If we don't do everything we can to fix all of the world's ills, shouldn't we at least start talking about where we can do the most good first?"

The Insider

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into areas that shout the loudest—but not necessarily the areas where the most good can be done. Read our exclusive interview with Lomborg to see where the most bang for our bucks can be generated.

And speaking of generating, Adrian Bowyer is a pioneer in technology that can generate itself. Specifically we're talking about open source, self-copying 3D printers and the movement of rapid prototyping writ large. Mark my words: this area is seeing a flood of talent and capital. Lots of experiments are being, and will be, tried—and the world will change for the better as new inventions in distributed manufacturing take hold.

And speaking of inventions, Todd Thomson and Shirl Penney are reinventing the financial advisory and wealth management business. Having run the enormously successful operation at Citi and seen first hand the trends and weaknesses of the bulge bracket banks, Todd and Shirl, with the help of technology, are revolutionizing the way advisors will manage hundreds of billions of dollars of wealth.

As always, here's to thinking big about thinking small and to the emerging inventors and investors who seek to profit from the unexpected and the unseen...



Had anybody asked that question before?

Well, it seemed like an obvious question, and it seemed like somebody ought to have answered that question, but it turns out nobody actually had. That was the inspiration for the Copenhagen Consensus, which we now run every four years. We basically ask the world's top economists, "What are the biggest problems, what are smart solutions to those problems, and how much bang do you get for every dollar you spend on these solutions?" Then we rank the solutions and tell the world where you can do the most good if you spend an extra dollar to help the world.

So how do these stack-ranked problems and solutions align with the issues that are popular in the media today?

We have a tendency to focus on issues where people shout the loudest, or where they have the cutest animals. This is not necessarily the best way to prioritize problems, so in some way you could say we're the defenders of boring or mundane problems. One of the best examples of this phenomenon is global warming. It's a big concern, and a real concern. People say we should be spending hundreds of billions, maybe even trillions of dollars to avoid this problem. In a perfect world, we should clearly solve global warming. But it turns out that the typical approaches to solving global warming—namely carbon cuts and carbon taxes—will end up costing a tremendous amount yet doing only a little good 100 years from now. Every dollar spent will only avoid a couple cents of climate damage. That's a bad deal. But there are many other problems we could do something about right now. For instance, there are a billion people who don't have enough food, and twice as many who lack access to clean drinking water and sanitation. 1.6 billion don't have access to electricity...the list goes on.

So what global spending gets the best bang for the buck?

What we found is that one of the best investments we could focus on is something most people have probably never heard of—micronutrient malnutrition. That, in some sense, proves the point of the organization. Almost half this world's population lacks one or more critical micronutrients, which could be solved with essentially just a vitamin pill. If you spent just a tiny fraction of what we're talking about spending on global warming, you could actu-

ally make life a lot better for half the people on this planet. For less than \$360 million dollars we could avoid virtually all of that suffering. So for every dollar spent, you could get a bang of about \$15 of good. That is by far the best investment the world could ever make. Another example is free trade, which would actually help developing countries about 10 times more than global warming will harm them. So why is it that we don't focus more on getting that bill passed?

Why don't we focus more on some of these big problems that could have immediate and affordable solutions?

Because they're less glamorous and they don't have as much clout. There are also not as many people who have a stake in championing these ideas. I think it's great that Al Gore champions global warming, but we should have someone like him championing free trade or clean drinking water or malnutrition. Another issue is fear. It's much easier to talk about issues like global warming because there are scary headlines to grab people's attention. But while fear seems to be a great motivator for grabbing people's attention, it's not particularly good at attracting sums of money. As we've seen with global warming, there's been lots of attention, but we've moved virtually nowhere in 20 years.

How do you get people to act for good?

You need smart solutions, and that's one of the things the Copenhagen Consensus provides. We actually did a Copenhagen Consensus just on climate. We simply asked, "If you're going to spend money on climate, how can you do so smartly?" What our Nobel laureates and 28 of the world's top climate economists told us: "Don't spend it on cutting carbon emissions now." While it may make you feel good, it doesn't actually do much good. But if you invest dollars instead into research and development in green energy, it turns out that because research and development is so cheap—and because it can have such a great impact in the long run—a dollar spent could impact \$11 of climate damage in the future. Compared to carbon cuts, that's a 500 times greater benefit, and it's a lot cheaper. So this is an example where I think we need to move the conversation away from the fear mongering and towards actual opportunities. If we can make solar panels cheaper than fossil fuels by innovating the price down—not by subsidizing, but by innovating—we would

have solved global warming. Everyone would switch to solar not because it's green, but because it's cheaper.

You've shared some counterintuitive findings around popular issues like global warming. What are some other insights surrounding different topics?

One interesting concern relates to ecological farming and organic foods. Many people are opposed to pesticides. In fact, it's very clear that pesticide residues can give people cancer. But you also have to remember that pesticides are what make it possible for us to produce a lot more fruits and vegetables, and in effect allow people to have a much healthier diet. So here's the math: we estimate that if you look at the current death figures for well-regulated pesticides in the U.S., there are probably about 20 people who die each year as a result of pesticide use. But if the U.S. stopped using pesticides and went all organic, not only would the country lose around \$100 billion dollars in annual production, but it would require a dramatic increase agricultural land use—cutting down vast tracks of nature in the process. But the real kicker is what happens to the prices of fruits and vegetables, where costs increase by 10-15%. That would result in a reduction in consumption of somewhere between 5-10%. Since it's also widely known that fruits and vegetables are one of the best ways to avoid cancer, we're able to estimate that such a reduction in the consumption of produce would result in an increased cancer load of about 26,000 people a year in the U.S. That does not seem like a smart tradeoff.

The topic of food reminds me of the famous Simon-Ehrlich wager related to resource scarcity. Where do you come out on the debate between environmentalists, who believe we will run out of everything, and the techno-optimists, who believe that human ingenuity and technology will alleviate their concerns?

If you just look at the current state of technology, it appears very clear we are going to run out of pretty much everything. There will be more people, with more money and higher demand, and there just won't be enough to satisfy everyone. I think most of us have this inherent belief that we cannot continue on our current path – at some point, we're going to be stuck with more and more people with less and less resources. Of course, evidence over the last 200 years indicates the exact opposite. And the one

reason for this is that we have technology and innovation that make it possible for us to feed more people, to consume more resources, and yet have ever more supply.

In biology, a Darwin or Dawkins might argue that there is a certain natural state of suffering amongst species, and when that suffering is placated via resource abundance, it creates more suffering as a result in the increased population growth. How do you feel about that natural state of the world and our ability to solve problems and perhaps create new ones in the process?

I think there are two parts to this answer. One part is to look at the suffering. Are we going to see more and more people on the planet? Well, the evidence very clearly indicates that we are not predominantly biological creatures who just want to multiply as much as possible, but rather social creatures. It seems very clear that once you get sufficiently rich, you realize that kids are no longer something you need lots of in order to farm your land or give you sustenance when you are old. They're actually pretty darned expensive, and that's why most people in the modern world end up having 1 or 2 instead of 6 or 7. It appears most of the rest of the world is approaching this birth rate. So the dramatic population growth that we have seen is pretty much over. We're actually expecting a world where we'll have about 9 billion people in the mid-century, and that number should remain relatively flat, so if we solve our problems this time around, it is very unlikely they'll come back. In fact, I would imagine one of our long-term problems will relate to not having enough young people to support us when we get old.

Many of the issues you work on seem to

"If we don't do everything we can to fix all of the world's ills, shouldn't we at least start talking about where we can do the most good first?"

be dominated by zealots, with a set of beliefs that are almost religious. How do you bring logic and reason to people that cling to such strong notions?

I think the trick is to recognize that most people want to do good. Now, we are all, to some extent, biased by certain assumptions about the world, but the point is that many of those assumptions are typically fairly unexamined. So we start posing questions. Is it really a good idea to go organic if that means cutting down more of nature and increasing cancer rates? Of course people have a hard time believing that at first, but then there's also a sense of surprise when they discover their assumptions are so different from what data actually seems to show. I find that there is a huge amount of willingness to engage in these conversations. It doesn't mean that this is a battle that's easily won, but the point is to recognize that most people are good and want to do the right thing, and it's about treating them respectfully and debating constantly on the merits of the argument — not *ad hominem* attacks. The truth has a curious way of winning out.

You seem to be able to placate a lot of scary thoughts with the power of rationality and economics. But what does truly scare you?

I think fear is always going to be a powerful motivator. I'm sure the Darwinians would agree we're the survivors of ancestors who were pretty damn scared of saber-toothed tigers! So it makes sense that we may be naturally a little too fearful. But what really frightens me is the fact that we are foregoing so many great opportunities to make the world a dramatically better place. We spend far too much time talking about issues that would end up doing very little good for a lot of money. Germany is spending \$75 billion dollars supporting solar panels. The country is the biggest consumer of solar panels in the world, yet they only provide about 0.1% of Germany's energy. The total effect of all this money will be to postpone the effects of global warming at the end of the century by just seven hours. That money could have been spent developing more efficient solar panels, or alleviating some of the terrible poverty that exists in the world right now. I want to make sure that we start spending money in a better way. We are mainly the makers of our own destiny. We've done pretty well, but we could do a lot better. **ET**