

Copyright 2003 Time Inc.
Fortune

September 15, 2003

SECTION: FEATURES/FREE THINKERS; Pg. 179

LENGTH: 2859 words

HEADLINE: The Man Who Would Have Us Bet On Terrorism--Not To Mention;
Discard Democracy And Cryogenically Freeze Our Heads--May Have A Point
(About
The Betting, We Mean)

BYLINE: Jeremy Kahn

BODY:

Robin Hanson is a married, 44-year-old father of two who teaches economics at George Mason University, a commuter school with aspirations that's plunked amid the affluent sprawl of northern Virginia. At first glance there wouldn't seem to be anything radical or controversial or even particularly interesting about him.

Then he opens his mouth. The words spill out in a nervous torrent, and what words they are: Hanson thinks we should replace democracy as we know it with a system he calls "futarchy," in which government policies are determined largely by a futures exchange. He thinks it's odd that people ever disagree (since the truth is the truth, after all) and has been doing extensive research into why they do. He wants the U.S. to open its borders to unrestricted immigration. He figures he has a better than 5% chance of living forever--thanks to the several hundred dollars he pays each year to a company that promises to cryogenically freeze his head after he dies.

"Robin doesn't walk the same path as everybody else," says economist John Ledyard, who was Hanson's Ph.D. advisor at the California Institute of Technology. "But some of the best ideas in my profession came from those who didn't think the same way as the rest of us."

Hanson has struggled to get people to take notice of his often shocking ideas. His work has been published mostly in off-the-beaten-track journals or on the Internet discussion boards of a group called the Extropians, the members of which combine boundless enthusiasm for technology with an extreme form of libertarianism. He says he went to the expense and trouble of getting a Ph.D. almost entirely so that people would take him seriously. But even now his name wouldn't ring a bell with most of his fellow academic economists.

This summer, though, one of Hanson's "viewquakes," as he likes to call them, became a genuine national sensation. The only problem was, everybody hated it. Hanson's brainchild was roundly condemned by several U.S. Senators, derided by the likes of Nobel Prize-winning economist Joseph Stiglitz and bond guru Bill Gross, and lampooned by late-night talk show hosts. The taint of being associated with it cost retired admiral and former National Security Advisor John Poindexter his Pentagon job.

This seemingly toxic idea was what came to be known as the "terrorism futures market." The official name for it was the Policy Analysis Market, a Pentagon-sponsored experimental online futures exchange that would have allowed traders to speculate on wars, assassinations, and terrorism in the Middle East--as well as more innocuous matters like Iran's GDP growth and Egypt's level of political stability--as a way to improve intelligence forecasting. The exchange was assailed as immoral, a "futures market in death," and a ghoulish way for terrorists to profit from their evil acts. Less than 24 hours after Democratic Senators Byron Dorgan and Ron Wyden held a press conference to denounce it in July, the Defense Department scrapped the project.

There is--no denying it--something stomach-turning about the idea of betting on death. But intelligence analysts already are paid to predict terrorist attacks, and insurance companies wager on people's lives every day. What Hanson was trying to do was make the existing system of intelligence gathering work better. And there are plenty of reasons to believe that the Policy Analysis Market, as crazy as it sounds, might have done just that.

Observers from Adam Smith on down have noticed that markets do a remarkably good job of collecting information from thousands of participants and turning it into a kind of collective wisdom--reflected in prices--that is greater than the sum of its parts. What Hanson and his kindred spirits want to do is harness that collective market wisdom to do more than set the price of a bar of soap or a share of GE. Commodity futures markets already forecast the price of wheat and corn better than the best individual analyst can. Orange juice futures have been shown to be more accurate predictors of Florida weather than conventional forecasts. From there it isn't much of a leap to propose that "information markets"--futures exchanges set up explicitly to make forecasts rather than to hedge financial risk--be used to improve the way companies and governments make forecasts and decisions.

Much of the research into these matters has sprung from an academic movement known as "experimental economics." Its roots go back to the late 1940s, when Harvard economist Edward Chamberlin used classroom market games to demonstrate his famous theory of monopolistic competition. But it didn't really take off until the mid-1970s, at the sun-drenched engineering mecca that is Cal Tech. There a visiting University of Massachusetts economist named Vernon Smith--who had participated in some of Chamberlin's economic experiments as a grad student at Harvard and conducted a few of his own while teaching at Purdue in the 1950s--teamed up with a young Cal Tech professor, Charles Plott, to transform his mostly forgotten research sideline into something far more significant. Smith and Plott pioneered "wind tunnel" economics, constructing small-scale real-money markets in a carefully controlled laboratory setting to test and refine theories the same way that engineers test scale models of cars or airplane wings in wind tunnels.

What they discovered was that the markets they constructed did a stunningly good, albeit not always perfect, job of sifting through information and noise and arriving at correct values for whatever security was being traded. They also developed novel insights into how to design better markets. For a long time this work was very much on

the academic fringe. But last year Smith, who went on to teach at the University of Arizona and George Mason (his office now is right down the hall from Hanson's), won an economics Nobel prize. And Plott, who stayed at Cal Tech, has--together with John Ledyard, who arrived in 1977 and soon became a leading authority on market design--churned out legions of "social science" Ph.D.s (Cal Tech doesn't have an economics department) whose interest in using markets in new ways is beginning to change the world.

In 1988, Robert Forsythe--who had taught alongside Plott and Ledyard at Cal Tech--launched the granddaddy of information markets at the University of Iowa. The Iowa Electronic Markets began trading real-money futures contracts on the outcomes of political elections and have since added other topics, most notably futures on the Federal Reserve's interest rate decisions. In a study published three years ago, Forsythe and his colleagues found that over 12 years--a period covering 41 elections in 13 countries--the Iowa Electronic Markets consistently outperformed opinion polls in forecasting election outcomes.

Other information markets have also delivered promising results. The play-money Hollywood Stock Exchange has a good track record in picking Oscar nominees, while Tradesports.com, a real-money Irish website, gained notoriety by offering futures contracts that accurately predicted when Saddam Hussein would be ousted. More to the point for FORTUNE readers, Cal Tech's Plott helped Hewlett-Packard establish an internal market in the mid-1990s that let salesmen speculate on the monthly sales of printers and computers. In every case, the markets' predictions were more accurate than HP's official forecasts. HP Laboratories has now established its own experimental economics group--made up mostly of Ph.D.s from, you guessed it, Cal Tech.

It was the success of such markets that caught the eye of Michael Foster, a project manager at the Defense Advanced Research Project Agency (DARPA), the Pentagon division that helps develop the military's next generation of technology. In May 2001, Foster put out a request for proposals on the use of markets as prediction tools.

Enter Robin Hanson. Hanson came to economics after studying physics at the University of California at Irvine and the University of Chicago and spending a decade doing artificial-intelligence research at Lockheed and NASA. The son of a Southern Baptist preacher, Hanson is possessed of a near-religious fervor for bettering the world and a near-arrogant conviction that he knows best how to do it. As long ago as the late 1980s, he was thinking up market-based improvements to government institutions, but found that with his techie background he couldn't get anyone--other than the occasional Extropian--to listen.

So he went to Cal Tech to get a Ph.D. There he worked closely with Ledyard and honed his belief in the wonders of markets. While a grad student, he helped set up an online game called the Foresight Exchange that lets players make play-money bets on any topic they propose. Hanson would have preferred to create a real-money exchange--the great advantage of real markets is that traders must put their money where their mouth is in a way that the "experts" we usually rely on to forecast events do not. But real-money betting markets tend to run afoul of gambling and securities laws. It took a special "no action" letter from the Commodity Futures Trading Commission, for example, to

keep the Iowa Electronic Markets out of legal trouble. Defense Department sponsorship would give similar cover. So when Hanson, a professor at George Mason since 1999, heard about the DARPA plan, he saw it as a perfect opportunity to demonstrate the power of information markets. He teamed up with Net Exchange, a San Diego company that Ledyard co-founded in 1994 to commercialize auction technology, to make a bid.

Hanson figured that the information that would interest the Pentagon most was intelligence. "I pushed for the big time," he says. It worked. Net Exchange landed one of two \$ 1 million grants to develop prediction markets for DARPA. The other went to a team associated with the Iowa Electronic Markets that planned to use futures markets for less controversial purposes like improving defense procurement--but it was also canceled amid the terrorism-market controversy.

Hanson's Policy Analysis Market was going to differ from previous information markets in two critical ways. The first, of course, was its subject matter. The Net Exchange team contracted with the Economist Intelligence Unit to produce a set of indexes that would measure countries' political stability, economic growth, and military readiness. Traders could buy simple contracts on the future value of these indexes. But they could also propose more-complicated derivative contracts that would, for example, bet that a country's political instability index would increase contingent on the occurrence of a specific event. "I fully anticipated people would suggest assassination securities," says Net Exchange president Charles Polk, another Cal Tech Ph.D.

Economists are accustomed to valuing everything--including human lives--in dollars. So Net Exchange barely considered the possibility that people might find it unseemly to create a market that would allow betting on terrorist incidents. "We just weren't aware of where the cut-off was between what was acceptable and what was beyond the pale," Hanson says. Also, the Sept. 11, 2001, attacks on New York and Washington "made terrorism the way to market this," Ledyard says. PAM ended up under the auspices of DARPA's Terrorism Information Awareness Office, headed by the controversial Poindexter, who was indicted for his role in the 1980s Iran-Contra scandal. Poindexter's association with PAM probably guaranteed trouble. "We knew politically Poindexter was a big target," Polk says.

The second thing that was going to be new about PAM was the technology the market would have used. Markets work best when they are what economists term "thick," meaning that they're made up of many traders each contributing a small amount of information. Most existing financial markets are thick. On the other hand, "thin" markets with fewer traders tend to behave erratically. PAM had the potential to have many thin markets.

Ledyard has spent a lot of time researching one way to thicken a market: a combinatorial auction. In a combinatorial auction, traders submit contingent bids for a basket of linked assets. A swap--where a trader might sell 100 shares of Company X for \$ 10 only if he can simultaneously buy 100 shares of Company Y for \$ 8--is a basic contingent bid. A mathematical algorithm is then used to find an optimal match for each bid and offer. To thicken things up even more,

Net Exchange added a "market scoring rule" proposed by Hanson, a mathematical way of maximizing the amount of truthful information a trader reveals. That kind of trading system has vast potential in other spheres where securities are complex and markets are illiquid--derivatives, for example. "It was always our intent to commercialize this technology," Polk says.

There is no telling whether PAM would have worked. Experimental economics veterans Plott and Forsythe are skeptical. "When you have a very small number of people with very closely held information, I have some doubts about that kind of a market," Forsythe says. Another potential problem is something economists call "moral hazard." It wasn't that, as some PAM critics claimed, the market would provide terrorists with a monetary incentive to carry out attacks: In its initial phase PAM was going to be restricted to a few hundred participants drawn mostly from the intelligence and foreign policy establishment, and the maximum investment allowed would have been \$ 100. The real moral hazard with PAM was the risk that an important intelligence analyst might manipulate the market by changing his own forecasts.

Finally, while information markets can provide uncannily accurate predictions, they can also get things wrong. In lab tests of information markets, Plott has at times observed the formation of what he calls information "mirages," the equivalent of bubbles in asset markets. Hanson doesn't deny that markets can go bonkers--he says he pulled all his money out of the stock market in 1999 because it seemed wildly overvalued. He just thinks that, whatever their flaws, markets are better at sifting information and looking into the future than government bureaucrats or even corporate executives are.

Despite their concerns, other experimental economists agree that killing off the exchange was a big mistake. "There were many, many great ideas there based on solid research," says Plott. The happy irony of the PAM controversy, though, is that all the publicity has sparked new interest in information markets. Net Exchange's Polk says he has received ten serious inquiries from businesses interested in commercial applications of the technology behind PAM. Ledyard thinks a private enterprise may even set up PAM as an unregulated, off-shore futures market, much like Tradesports.

Robin Hanson, meanwhile, finally has a wider audience for his ideas. Most of them are explored in depth on his enormously entertaining website (hanson.gmu.edu/home.html), where, along with explaining futarchy, Hanson expresses the wish that he could study the economics of science fiction, declares that his favorite musicians are Vangelis and Enya, and discloses that his Jungian personality type is "ENTP."

"I'm making myself available to be painted as a wacko if someone wants to do that," Hanson admits. Indeed he is. But there's something infectious about the guy's enthusiasm for big ideas. Hanson says he hopes companies will start employing futures exchanges to determine which advertising firms to select, which new products to introduce, and whether to fire their CEOs. Hmm, has some appeal, doesn't it? Futarchy, here we come.

FEEDBACK jkahn@fortunemail.com

BOX STORY:

Oscar, Saddam, and other tradable goods Four information markets that work

IOWA ELECTRONIC MARKETS Famous for its ability to predict the outcome of U.S. presidential elections with more accuracy than opinion polls, this futures exchange was started in 1988 by economists at the University of Iowa.

HP The company has run markets in which employees speculate on monthly sales of printers and other computer equipment. The markets' predictions have invariably beaten official sales forecasts.

HOLLYWOOD STOCK EXCHANGE This play-money market lets traders buy "Moviestocks " pegged to the box office success of upcoming releases. It has proved prescient in picking Oscar winners.

TRADESPORTS.COM Futures traders on this Irish sports and current events site were fairly close to predicting the date of Saddam Hussein's fall from power.

BOX STORY:

The strength of markets is that traders put their money where their mouth is in a way that the usual "expert" forecasters seldom do.

They only barely considered the possibility that people might find it unseemly to place bets on terrorist attacks.

GRAPHIC: COLOR PHOTO: PHOTOGRAPHS BY ALYSON ALIANO, George Mason University's Robin Hanson, the brainiac behind the Pentagon's ill-fated "terrorism market."; COLOR PHOTO: BUTTON: D. AND J. FRENT COLLECTION--CORBIS, COLOR PHOTO: OSCAR: GREGG DEGUIRE--WIREIMAGE.COM, COLOR PHOTO: FIORINA: GREG STIDHAM--BLOOMBERG NEWS, COLOR PHOTO: HUSSEIN: REUTERS, COLOR PHOTO: PHOTOGRAPHS BY ALYSON ALIANO, Cal Tech economist John Ledyard knows how to make a market behave.; COLOR PHOTO: ABID KATIB--GETTY IMAGES, The market could have tracked political instability in the Gaza Strip, above.

LOAD-DATE: September 2, 2003