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Revolutionaries

You Can't Predict Who Will Change The World

Nassim Nicholas Taleb 05.24.07, 6:00 AM ET

Before the discovery of Australia, Europeans thought that all swans were white, and it would have been considered completely unreasonable to imagine swans of any other color. The first sighting of a black swan in Australia, where black swans are, in fact, rather common, shattered that notion. The moral of this story is that there are exceptions out there, hidden away from our eyes and imagination, waiting to be discovered by complete accident. What I call a "Black Swan" is an exceptional unpredictable event that, unlike the bird, carries a huge impact.

It's impossible for the editors of Forbes.com to predict who will change the world, because major changes are Black Swans, the result of accidents and luck. But we do know who society's winners will be: those who are prepared to face Black Swans, to be exposed to them, to recognize them when they show up and to rigorously exploit them.

Things, it turns out, are all too often discovered by accident--but we don't see that when we look at history in our rear-view mirrors. The technologies that run the world today (like the Internet, the computer and the laser) are not used in the way intended by those who invented them. Even academics are starting to realize that a considerable component of medical discovery comes from the fringes, where people find what they are not exactly looking for. It is not just that hypertension drugs led to Viagra or that angiogenesis drugs led to the treatment of macular degeneration, but that even discoveries we claim come from research are themselves highly accidental. They are the result of undirected tinkering narrated after the fact, when it is dressed up as controlled research. The high rate of failure in scientific research should be sufficient to convince us of the lack of effectiveness in its design.

If the success rate of directed research is very low, though, it is true that the more we search, the more likely we are to find things "by accident," outside the original plan. Only a disproportionately minute number of discoveries traditionally came from directed academic research. What academia seems more masterful at is public relations and fundraising.

This is good news--for some. Ignore what you were told by your college economics professor and consider the following puzzle. Whenever you hear a snotty European presenting his stereotypes about Americans, he will often describe them as "unintellectual," "uneducated," and "poor in math," because, unlike European schooling, American education is not based on equation drills and memorization.

Yet the person making these statements will likely be addicted to his iPod, wearing a T-shirt and blue jeans, and using Microsoft Word to jot down his "cultural" statements on his Intel-based PC, with some Google searches on the Internet here and there interrupting his composition. If old enough, he might also be using Viagra.

America's primary export, it appears, is trial-and-error, and the innovative knowledge attained in such a way. Trial-and-error has error in it; and most top-down traditional rational and academic environments do not like the fallibility of "error" and the embarrassment of not quite knowing where they're going. The U.S. fosters entrepreneurs and creators, not exam-takers, bureaucrats or, worse, deluded economists. So the perceived weakness of the American pupil in conventional studies is where his or her very strength may lie. The American system of trial and error produces doers: Black Swan-hunting, dream-chasing entrepreneurs, with a tolerance for a certain class of risk-taking and for making plenty of small errors on the road to success or knowledge. This environment also attracts aggressive tinkering foreigners like this author.

Globalization allowed the U.S. to specialize in the creative aspect of things, the risk-taking production of concepts and ideas--that is, the scalable part of production, in which more income can be generated from the same fixed assets through innovation. By exporting jobs, the U.S. has outsourced the less scalable and more linear components of production, assigning them to the citizens of more mathematical and culturally rigid states, who are happy to be paid by the hour to work on other people's ideas.

Let us go one step further. It is high time to recognize that we humans are far better at doing than understanding, and better at tinkering than inventing. But we don't know it. We truly live under the illusion of order believing that planning and forecasting are possible. We are scared of the random, yet we live from its fruits. We are so scared of the random that we create disciplines that try to make sense of the past--but we ultimately fail to understand it, just as we fail to see the future.

The current discourse in economics, for example, is antiquated. American undirected free-enterprise works because it aggressively allows us to capture the randomness of the environment--the cheap Black Swans. This works not just because of competition, and even less because of material incentives. Neither the followers of Adam Smith nor those of Karl Marx seem to be conscious of the prevalence and effect of wild randomness. They are too bathed in enlightenment-style cause-and-effect and cannot accept that skills and payoffs may have nothing to do with one another. Nor can they swallow the argument that it is not necessarily the better technology that wins, but rather, the luckiest one. And, sadly, even those who accept this fundamental uncertainty often fail to see that it is a good thing.

Random tinkering is the path to success. And fortunately, we are increasingly learning to practice it without knowing it--thanks to overconfident entrepreneurs, naive investors, greedy investment bankers, confused scientists and aggressive venture capitalists brought together by the free-market system.

We need more tinkering: Uninhibited, aggressive, proud tinkering. We need to make our own luck. We can be scared and worried about the future, or we can look at it as a collection of happy surprises that lie outside the path of our imagination.

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