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PROFILES IN INNOVATION

An interview with **Nicholas Thompson**
editor, *Wired* magazine

ORRICK: AI can automate complex decisions and learn from its mistakes. But those machines have also been shown to reflect and reinforce human bias. How can companies avoid incorporating such bias into their machines?

NICK THOMPSON: This is a fundamental issue in AI. And this raises an important question: who gets to determine whether data is biased? What you don't want to do is throw up your hands and say machines will find the truth. Nor do you want companies to insert their own values and biases, since decisions made by these companies will shape our world.

Companies need to make sure they're always questioning their databases and their results. They need to ask if the results are skewed, if they're different than anticipated, and if so, they have to dig back in and see what happened. However, the people who build the machines won't be able to see that bias, so they need a separate team to review those results. This highlights why gender dynamics are so important in Silicon Valley.

Instagram and other social media platforms are experimenting with making the internet a safer space—where fake news and vulgar comments are vetted and removed. Is this a good thing? Should we allow companies to dictate the information we see and share? Who oversees their oversight?

Free speech and American conversations are happening on social media platforms, and those companies need to take their responsibility seriously. These companies need to set some limits, and you don't want a place like Instagram where people can be bullied to the point of suicide. You can also overreact. You can set up systems where things you disagree with disappear, or things that are slightly offensive disappear. There's a way to strike the balance, and I think we will find that path.

Blockchain's impact appears to be skyrocketing. How can businesses take advantage of this trend?

People should put a lot of time into this. You can use blockchain as a public ledger of transaction history—customer identity, all kinds of elements of security, etc.—and build that into your infrastructure. It can make your company more secure or faster than before.

AI is rapidly expanding into the stock business. Will the growth of proprietary AI investment technology give certain companies and investors an unfair advantage?

I would be worried that there will be companies that can manipulate the markets. They'll have super intelligent computers making super intelligent decisions. There will be algorithms making decisions and we won't know why. The potential power and lack of transparency of such systems is frightening.

Which raises an important legal question: if someone writes code that unintentionally leads to a computer doing something illegal, is the person who wrote the code at fault if they did not intend harm? Where does the responsibility take place?

What do you see as the industry's obligation to balance innovation surrounding the Internet of Things and privacy?

I think that we need to enter a period of more transparency of the data we're collecting and how it's being used. I think people will start caring more than they did in the past. The negative public reaction to Silicon Valley will lead to requirements that force more competition into the marketplace by requiring companies to share that information with competitors.

In my opinion, the companies won't change this voluntarily; they want complete data capture and zero transparency.

Futurists are predicting 3D printing could be used for organ transplants by 2024. Do you think 3D printing's medical advancements will be its greatest impact on our society?

I do know one of 3D printing's advantages is it gives incredible precision, so I think that makes sense. But I don't know enough about the medical applications in that field to know.

The car-sharing economy is shaping how our society views and values individual ownership. Do you think the sharing economy will have as significant an impact on the housing or other markets?

Yes, we're just beginning to see this evolve. For example, I think it will transform the way young people and particularly those over 65 work in a way that is surprising. For the seniors in particular, they have a certain amount of guaranteed income but often lack savings. They could use additional income but also flexibility. The sharing economy makes a lot of sense for people in that scenario.

When Smart Machines Make Bad Choices

When John shoots Bob with a gun, it's pretty clear who's responsible. But what if John builds a "smart" machine that ends up killing Bob by "accident"?

Whether the machine is an autonomous car, drone, or vacuum cleaner, many cases involving harm could be covered under existing product law that distinguishes between design defects and user negligence, says Annette Hurst, an intellectual property partner in Orrick's San Francisco office. And if a business builds an "intelligent" agent, the business can be held responsible under a doctrine known as *respondeat superior*.

It gets murkier when John builds a

machine that can act independently based on what it learns—and then the machine falls in with the wrong crowd. Nasty words are hurtful enough, but what if future self-teaching machines are making lending or hiring decisions?

"It's been shown that when we train machines on datasets that are reflective of existing societal bias, the algorithms are biased as well," says Hurst. "But some existing rules on discrimination require finding an element of intent. When it comes to machine agents, you can't measure subjective intent. You'll have to use a rule that looks only to disparity of impact."

The machine—and by extension its maker—would be held responsible, regardless of anyone's intent.

—Richard Sine