Roundtable News

A CONVERSATION WITH DAVID AUTOR ON THE FUTURE OF WORK

Most of us have seen predictions of the demise of work as robots and automation steal what had been human jobs. But the central question David Autor takes up is: Why are there still so many jobs after the technological advances of recent decades? In a fascinating presentation to the Roundtable in late May, Autor, Ford Professor in the MIT Department of Economics and co-leader of the MIT Work of the Future Task Force, touched on the labor-market impacts of technological change, globalization, the problem of a booming economy creating many new jobs yet unequally distributing the economic rewards, and the implications for schools.

"If I'm successful," he said, "I'll convince you that there's lots of new work being created." We do need to worry about the future of work, he underscored, but the worry should be about the distribution of the benefits—in particular, the quality of jobs—in the emerging economy, not about whether work will be available.

Autor walked the Roundtable through four central concerns: Why are there still so many jobs? What is this new work and where does it come from? The future won't take care of itself. And thinking about shaping the future of work.

Why so many new jobs? Three factors go a long way toward explaining why we have so many new jobs, said Autor: insatiability, complementarity, and the need for new expertise. "The most obvious factor is that people are insatiable." Pointing to a picture of the entire contents of a typical California home in 1985, he argued that taking the same picture today would require a much wider camera lens. "As people's incomes rise, their perceived needs rise."

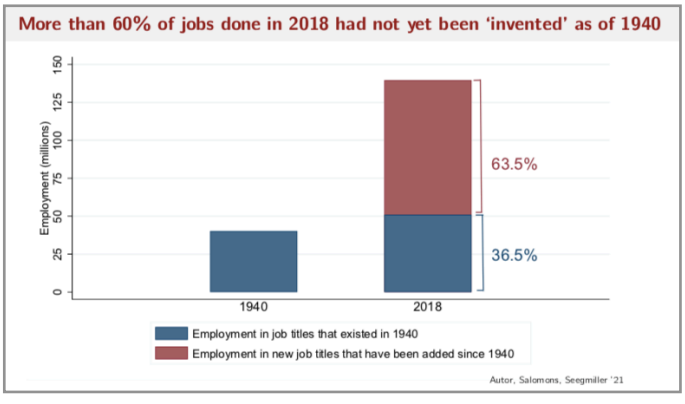
Complementarity also comes into play. As technology develops, it augments work. It doesn't necessarily replace it. Medical professionals, carpenters and roofers, architects and accountants have taken advantage of a wide variety of new technologies to change the nature of their work—new diagnostic lab tests, pneumatic nail guns, computer-aided design, and spreadsheets have generated increases in productivity beyond anything imaginable decades ago.

Finally, we invent new work and with it, we require new expertise and specialization. Accountants used to work with Burroughs calculating machines. Now that work is organized digitally, and new tasks require computer skills and financial compliance specialists. Fitness trainers still worry about work rates and sweating, but they are also concerned with heart rates and pace, along with entirely new specialties in sports psychology, nutrition, and therapeutic recreation.

David Autor

New work and where it comes from. "Getting into the 'geeky' part of the talk," Autor described using the Census Bureau's Alphabetical Index of Occupations, a system of classifying workers by occupation that is developed from decennial Census data. Every decade about 30,000 new types of occupations appear. Comparing successive editions of the Alphabetical Index from 1910 to today, Autor offered one example per decade of a new occupation. In 1940, automated welding machine operators first showed up. Textile chemists made an appearance in 1960. Controlling drones remotely was identified as a specialty in 1980, while pediatric vascular surgeons came on the scene in 2018. All of these occupations are highly specialized, highly paid occupations, because the skills required are scarce.

On the other side of the spectrum, non-specialized work tends to pay poorly, even if socially valuable. So, waiters, housekeepers, security guards, day care teachers, and home health aides are often performing life-and-death tasks. But because they require only limited training, they cannot command the sort of income that specialized workers do.



An added wrinkle in the job-creation phenomenon reaches back to Autor's distinction between augmentation and replacement. Analyzing three separate databases from the Bureau of the Census, the Bureau of Labor Statistics, and the U.S. Patent and Trademark Office, Autor and his colleagues examined jobs in which automation augmented effort and those in which it substituted for workers' tasks. "Holding automation fixed, we see that occupations exposed to more augmentation (and higher wages) are growing. And holding augmentation fixed, occupations exposed to more automation are contracting."

The upshot of all this "geekiness" is crystal clear. More than 60% of the jobs done in 2018 had not yet been "invented" as of 1940.

Future won't take care of itself. The good news is that we're not running out of jobs. "The bad news is that most workers in the United States are benefitting relatively little from rising productivity. The real shocker is that productivity has increased by 75–80% since the mid-1970s, but median worker's income has increased only 11%." How is that possible? "The answer of course is steeply rising inequality." Most of the rising productivity has accrued to those with post four-year degrees (and to some extent those with college degrees). "But for those with some college or less, earnings have stagnated for 40 years."

Many advanced economies have experienced something similar, he pointed out, "but the United States is an outlier, ranking right alongside Hungary" in this index of inequality. What accounts for this development? There's the whole digitalization of work and the divergence of work between the highly skilled and the well paid and those with fewer skills and lower income. A "hollowing out" of middle occupations has been accompanied by the growth of a "lot of generic personal services—food services, cleaning, home health care and the like."

Then there was "mismanaged globalization." China's rise brought half a billion Chinese people into the middle class, but it produced huge downward pressure on U.S. manufacturing and caused great economic pain. "We behaved as though labor markets were perfect" and did not prepare for this. Finally, we have neglected labor market governance and institutions—labor rights, the minimum wage, and employment regulations that have not changed in 50 years. So fast-food workers in Scandinavia are earning $21 or $24 an hour while those in the U.S. are earning $10.33. Closer to home, Canadian fast-food employees are earning $14.01 an hour, not to mention non-wage compensation in the form of health care, paid family medical leave, and paid holidays and vacations. It's unlikely that Canadian workers at Tim Horton's are 30% more productive per hour than their U.S. counterparts working at McDonalds—suggesting that these institutional forces, not just market forces, help explain the discrepancy.

These are low paid jobs everywhere, he emphasized, but the degree to which they are low paid and the set of working conditions associated with them is not solely a market phenomenon, but a societal choice in the United States.

Shaping the future of work. We need to worry about shaping the future of work now, suggested Autor. Momentous changes are in the offing—self-driving vehicles, industrial robots, intelligent supply chains, additive manufacturing (think 3D printing), and artificial intelligence—but they will unfold gradually. For example, even if autonomous vehicles were perfected tomorrow it would take decades to replace all the vehicles on the road today, while spending billions re-engineering our roads and traffic control systems. "The point I want to make is that we have a great opportunity to shape how these things develop" if we act now to give people the skills they need and help them adjust to the rate of change. "Technology is not simply something that we have to deal with when it lands on us. We should be actively engaged in directing where we want to invest."

Implications for schools. Asked about the implications of this analysis for schools and school leaders, Autor focused on three areas: foundational literacy skills, including reading, writing, and mathematics; analytical thinking and the ability to find data and draw logical inferences from that information; and interpersonal skills, including the ability to work in teams, make presentations, and motivate others. "We will need people who are analytical, flexible thinkers—and it would be nice if these people could write as well! People with such skills will have many opportunities in the years ahead."

Steve McCammon, Executive Director
National Superintendents Roundtable
P. O. Box 6929, Louisville, KY 40206
steve@superintendentsforum.org
www.superintendentsforum.org

Schedule of Remaining NSR Meetings for 2022

- **June 15** member check-in (Zoom)
- **July 13** virtual speaker series featuring **Henry Pettiegrew**
- **August 17** member check-in (Zoom)
- **September 14** virtual speaker series featuring **Jim Johnson**
- **October 14-16** meeting at Jimmy Carter Presidential Library in Atlanta, GA (In-Person)
- **November 16** member check-in (Zoom)
- **December 7** virtual speaker series featuring **Ben Houltberg**