## Jobs threatened by machines: A once 'stupid' concern gains respect

By Eduardo Porter June 7, 2016 – *The New York Times* 

They replaced horses, didn't they? That's how the late, great economist Wassily Leontief responded 35 years ago to those who argued technology would never really replace people's work.

Horses hung around in the labor force for quite some time after they were first challenged by "modern" communications technologies like the telegraph and the railroad, hauling stuff and people around farms and cities. But when the internal combustion engine came along, horses — as a critical component of the world economy — were history.

Cutting horses' oat rations might have delayed their replacement by tractors, but it wouldn't have stopped it. All that was left to do, for those who cared for 20 million newly unemployed horses, was to put them out to pasture.

"Had horses had an opportunity to vote and join the Republican or Democratic Party," Leontief wrote, they might have been able to get "the necessary appropriation from Congress."

Most economists still reject Professor Leontief's analogy, but the conventional economic consensus is starting to fray. The productivity figures may not reflect it yet but new technology does seem more fundamentally disruptive than technologies of the past. Robots are learning on their own. Self-driving cars seem just a few regulations away from our city streets.

As the idea sinks in that humans as workhorses might also be on the way out, what happens if the job market stops doing the job of providing a living wage for hundreds of millions of people? How will the economy spread money around, so people can afford to pay the rent?

What if, say, the bottom quarter of the population in the United States and Europe simply couldn't find a job at a wage that could cover the cost of basic staples? What if smartlearning machines took out lawyers and bankers? Or even, God forbid, journalists and economists?

If you read my column last week you know the dim view I take of the Universal Basic Income — a minimum level of money offered to every citizen — as a tool to combat poverty in a country like the United States where there is still plenty of work for most people to do. Paying for it would require either shredding the safety net as we know it or raising taxes to Scandinavian levels.

On Sunday, an overwhelming majority of Swiss voters apparently agreed, voting down a proposal to give every adult roughly \$2,560 a month, regardless of their work status, and \$640 for each child under 18.

But that doesn't end the case for a universal income, as many of the brightest minds in Silicon Valley will tell anyone who asks. If we are facing a not-so-distant future of robot-fueled growth and rising potential for mass disemployment, maybe it's time to start thinking about how to provide a lot more income that isn't directly tied to a job.

Jeffrey D. Sachs of Columbia University has been working with a series of colleagues on an economic model of a world in which robotization both raises economic output and immiserates workers, pushing them out of their jobs. It is not a theoretical impossibility.

"The point for me is that these two scenarios — robots lead to nirvana and hell — can happen side by side," Professor Sachs told me.

"Generally capital wins and all labor can lose. It shows up as a fall in the labor share of national income."

In that event, preventing a dynastic society of relentlessly growing inequality would require large-scale redistribution. It could even take the form of a universal income paid for with a hefty estate tax — using some of the vast profits accruing to the owners of robots to finance a living for everybody else.

Since most paid human labor would be pointless, the disincentive to work produced by a monthly check would be unimportant. People could devote themselves to unpaid creative affairs.

"Don't destroy the robots," Professor Sachs said. But recognize that "not everybody would be better off as a result of market forces. With redistribution everybody could be made better off."

Many experts are not convinced. For every analysis like this one — forecasting that half of all jobs in the United States will be replaced by new technology — others point out that there is no evidence of humanity's impending redundancy.

A research paper published last month by the Organization for Economic Cooperation and Development argued that even the occupations most at risk of being replaced by machines contained lots of tasks that were hard to automate, like face-to-face interaction with customers.

It concluded that only 9 percent of American workers faced a high risk of being replaced by an automaton. Austrians, Germans and Spaniards were the most vulnerable, but only 12 percent of them risked losing their jobs to information technology.

Ever since the Luddites started smashing textile machines in the 19th century, workers have, as a whole, done rather well adapting to new technologies, retooling to find new jobs in other industries. Employment has increased throughout the modern age. As Kenneth S. Rogoff of Harvard put it a few years ago: It seems unlikely that millions of workers are headed to the glue factory like discarded horses.

And yet the nature of the new research, patiently counting how many jobs are likely to stay or go, suggests how far economists have come from the days when they simply dismissed popular fears of technological unemployment as ludicrous.

Last November, Lawrence H. Summers — a former Treasury secretary under President Bill Clinton, a top economic adviser in President Obama's first term and one of the youngest people to earn tenure on the Harvard faculty — strode up to the podium at the Peterson Institute for International Economics in Washington and made an unlikely admission: Perhaps economists were not always the smartest people in the room.

He reminisced about his undergraduate days at M.I.T. in the 1970s, when the debate over the idea of technological unemployment pitted "smart people," exemplified by the great economist Robert Solow, and "stupid people," "exemplified by a bunch of sociologists."

It was stupid to think technological progress would reduce employment. If technology increased productivity — allowing companies and their workers to make more stuff in less time — people would have more money to spend on more things that would have to be made, creating jobs for other people.

But at some point Mr. Summers experienced an epiphany. "It sort of occurred to me," he said. "Suppose the stupid people were right. What would it look like?" And what it looked like fits pretty well with what the world looks like today.

For large categories of workers, wages are inadequate. Many are withdrawing from the labor force altogether. In the 1960s, one in 20

men between 25 and 54 were not working. Today it's three in 20. The population is generally healthier than it was in the 1960s; work is almost uniformly less demanding. Still, more workers are on disability.

"Maybe the stupid people weren't quite as stupid as I thought they were," Mr. Summers conceded. "This was at least a serious concern that had to be thought about."

In a world in which many Americans do not work during large chunks of their lives, we might have to conceive of Social Security and disability much more broadly than we do today.

That, Mr. Summers said, "could start to look like a universal income.

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