

The myth of the endless ladder

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“Ultimately, it’s a virtuous cycle,” [declares](#) economics reporter Annie Lowrey in a *Times Magazine* piece on the job-displacing effects of automation technologies, “because it frees humans up to work on higher-value tasks.” The challenge today, she writes, a few paragraphs later, “is for humans to allow software, algorithms, robots and the like to propel them into higher-and-higher-value work.” The idea is an old one. Aristotle compared tools to slaves: both provide their masters with time for more refined activities. Thinkers as various as Marx, Keynes, and Oscar Wilde said similar things during the industrial revolution. It remains a common refrain today, as automatons and software take over more of the work people used to get paid to do. “We need to let robots take over,” [wrote](#) Kevin Kelly last year. “They will help us discover new jobs for ourselves, new tasks that expand who we are. They will let us focus on becoming more human than we were.”

There’s something deeply comforting about the notion that labor-saving technology inevitably pushes workers to higher pursuits. It salves our anxieties about job losses and wage declines — everything will work out fine, “ultimately” — while playing to our unbounded sense of self-importance. The ladder of human occupation goes forever upward; no matter how high our machines climb, there will always be another rung for workers to clamber to. But like many of the comforting things we tell ourselves, it’s no more than a half-truth. And when trotted out as a pat response to contemporary unemployment and underemployment problems, it becomes a dangerous fallacy. By promoting a reassuring fantasy about the future, it relieves us from grappling with the possibility that new, structural problems are opening up in the economy.

The problem with the endless-ladder myth begins with the fuzziness of its claims. What exactly is a “higher-value task”? Are we talking about value for the employer, or value for the employee? Are we measuring value in terms of productivity and profit, or in terms of worker skill and satisfaction? Not only are those two things different; they’re often in conflict. One way that a machine can improve labor productivity is by reducing the number of workers required to produce something. Another way is by reducing the skill requirements of the worker’s job and hence reducing the worker’s pay. As analyses of the employment impacts of industrial machinery show, the use of technology to automate a job tends at first to enhance the skills of a worker, making the job more challenging and interesting, but as the machine becomes more sophisticated, as more job skills are built into its workings, a deskilling trend takes hold. The highly skilled craftsman turns into a moderately skilled or unskilled machine operator. Even Adam Smith understood that machinery, in enhancing labor productivity, would often end up

narrowing jobs, transforming skilled work into routine work. At worst, he wrote, the factory worker would become “as stupid and ignorant as it is possible for a human creature to become.”

That’s not the whole picture, of course. In evaluating the long-term effects of automation, we have to look beyond particular job categories. Even as automation reduces the skill requirements of an established occupation, it may contribute to the creation of large new categories of interesting and well-paid work. That’s what happened, as the endless-ladder mythologists will eagerly tell you, during the latter stages of the industrial revolution. The efficiencies of assembly lines and other mechanized forms of production pushed down the prices of all sorts of goods, which drove up demand for those goods, which led manufacturers to hire not only lots of blue-collar workers to operate and repair the machines but also lots of white-collar workers to manage the factories, design new products, market and sell the products, keep the books, and so forth. The resulting expansion of a consumption-minded, experience-seeking middle class ratcheted up demand for all sorts of other workers, from retail clerks to doctors and nurses to teachers to architects to pilots to journalists to government bureaucrats to etc. A virtuous cycle it most definitely was. What it wasn’t was the manifestation of some universal virtuous cycle, some inevitable dynamic in the economy. It was a virtuous cycle very much contingent on its time, and one of the most important of the contingencies was the limited capacity of industrial machinery to take over human work. Even a highly mechanized factory needed lots of people to tend the machines, and most professional and other white-collar jobs lay well beyond the reach of technology.

Times are different now. Machines are different, too. Robots and software programs are still a long way from taking over all human work, but they can take over a lot more of it than factory machines could. It seems pretty clear now that that’s one of the main reasons we’re seeing persistently depressed demand for workers in many sectors of the economy. What’s perhaps less well acknowledged is the spread of the deskilling phenomenon into so-called knowledge work. As computers become more capable of sensing the environment, performing analyses, and making judgments, they can be programmed to take over more white-collar skills. Professionals and office workers start to look more and more like computer operators, tenders of machines.

There will always be opportunities for individuals to design cool new products, make new scientific discoveries, create new works of art, and think new thoughts. But that says little about the prospects for the labor market in general. There’s no guarantee that the deployment of computers is going to open up vast new swathes of interesting, well-paid jobs the way the deployment of factory machines did. Recent experience suggests that computers may have very different consequences. What they seem to be particularly good at is concentrating wealth rather than spreading it, narrowing the work that people do rather than broadening it.

The language that the purveyors of the endless-ladder myth use is revealing. They attribute to technology a beneficent volition. It “frees us” for higher-value tasks and “propels us” into more fulfilling work and “helps us” to expand ourselves. We just need to “allow” the technology to aid us. Much is obscured by such verbs. Technology doesn’t free us or propel us or help us. Technology doesn’t give a rat’s ass about us. It couldn’t care less whether we have a great job, a crappy job, or no job at all. It’s people who have volition. And the people who design and deploy technologies of production are rarely motivated by a desire to create jobs or make jobs more interesting or expand human potential. They’re motivated, as Adam Smith also pointed out, by a desire to make money. Jobs have always been a byproduct of the market’s invisible hand, not its aim.

The biggest beneficiaries of the endless-ladder myth are those who have gained enormous wealth through the profit-concentrating effects of commercial computers. The myth helps them feel good about themselves. They, after all, are the ones who are setting in motion the virtuous cycle that, in the fullness of time, will bring us all to the nirvana of “higher-and-higher-value work.” It suits their business interests, too, by conflating those interests with society’s interests. Software and algorithms and robots will solve

our problems, if we allow them to.

I'm not saying that it's impossible that we'll soon be blessed with all sorts of great new jobs. The world's complicated; the economy's complicated; no one knows what the future's going to bring. I'm saying that we can't take it as a given that that's going to happen, and we certainly shouldn't assume that machines have the best interests of workers at heart. Ultimately, it's a virtuous cycle — except when it's a vicious one.