

# Revaluing Human Endeavor

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## **Abstract:**

This paper explores the changes-over-time in how society has valued human endeavor. It looks briefly at the changes in military leadership associated with technology advancements and more generally at labor history in the context of the evolution of human endeavor/labor valuation; sometimes responding to black swan events and sometimes in response to technology advances. This work suggests that robotics and artificial intelligence (AI) will profoundly affect human endeavor value under the current economic theories and argues that the way in which societies value human endeavor must change. It concludes that we will need a revised theoretical, practical, and measurement approach that will represent a major philosophical shift from current economic thought to address both the opportunities and the challenges stemming from the coming robotic/AI disruption.

## **Military Leadership Changes:**

History is replete with demonstrations of change in how we value human endeavor. “The Mask of Command”<sup>1</sup> looked at technologies impact on military leadership. Alexander the Great led from the front. Leadership was established by courage, muscle, intelligence, and the technology capability at the time (a good sword). By the time we get to WWII, Eisenhower commanded the D-Day invasion force from a war room in the UK—linked to field commanders by radio. Hitler, similarly, commanded from a war room that was well removed from the front—linked by the technology of the time to his field commanders. There were many changes to what made a good leader between the two examples—all tied to the evolution of technology. Today, military leadership is tied to the mastery of computers as well as today’s version of sophisticated weaponry. We are now introducing AI and robots onto the battlefield—and it is pretty safe to predict that the definition of good military leadership will again change.

## **Human Labor:**

The value of human endeavor has also changed over time—sometimes from the effects of what we would today call “Black Swan” events, sometimes by technology advancements. Historians trace at least part of the fall of feudalism to the black death. While the exact contribution of the plague to feudalism’s collapse is still fiercely debated, it clearly was a contributing factor. Essentially, feudalism depended upon the plentiful availability of human capital, the serfs. When 30 to 40% of the population died in the 1300’s from the plague, there were no longer enough laborers at the bottom of the hierarchical feudal pyramid to support the system.<sup>2</sup> There was now more demand for their services than there was supply—the value of their endeavor was redefined. Labor had value and laborers had some power.

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<sup>1</sup> John Kegan (1987) *The Mask of Command*, Penguin Random House

<sup>2</sup> T.B. James (1998) *The Black Death in Wessex*, Hatcher Review, 5, No. 46, Salisbury Hatcher Review Trust

Moving forward several centuries, technology evolved to include ocean-crossing sailing ships. Mercantilism was born and was the dominant economic theory from the 1500's into the 1700's.<sup>3</sup> This was a zero-sum gain theory and nations established colonies to enrich their mother countries by exploiting the resources of those colonies. The value of the colonies was tied to the resources that they could export to the mother country. Labor's value in the colonies was tied to the exploitation of those resources. By the late 1700's, steam power was available and the industrial revolution was underway with labor's value shifting to and valued for its assistance to the production from machines. Society shifted from agrarian and rural to industrial and urban. The corporation was invented. We abandoned the zero-sum-gain of Mercantilism to embrace the make-the-pie-bigger Absolute Advantage Theory, augmented by laissez-faire economics in "Wealth of Nations"<sup>4</sup>. Absolute Advantage Theory was replaced by the Comparative Advantage Theory<sup>5</sup> and was refined over time to include Milton Friedman's corporate purpose: "There is one and only one social responsibility of business—to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game, which is to say, engages in open and free competition without deception or fraud"<sup>6</sup>. Over this period, steam and later hydrocarbon energy was introduced to make production more efficient and materials became more available. Labor, viewed as a cost to be minimized, was required along with capital and materials to create value. The following quote, attributed to David Ricardo, set the tone for business' approach to labor: "There can be no rise in the value of labor without a fall of profits."<sup>7</sup>

Step forward a century to the introduction of semiconductors, computer technology, then AI and robots, into the business eco-system defined by Friedman's and Ricardo's previous quotes, which brings us to today. The full force of the disruption provided by the invention and development of the semiconductor is changing a fundamental and very basic developed-society assumption, i.e. that jobs are available to those who want them. Globalization pursuits made use of these technologies to shift job locale using a value rationalization method, i.e., a "system of production in which each of a product's components is produced where the cost of producing that component is lowest".<sup>8</sup> Early robots were doing jobs that were dangerous but that had a high value-add so that the cost of the robots made economic sense through a simple ROI lens. Eliminating a dangerous job with a robot was easy to accept. Moving a job elsewhere was more difficult to accept if it was your job that moved, assuaged only if you could find another job. The underlying assumption was always that another job would be available. That "new" job might require a new skill set and retraining—but a job could be had. AI and robotic technology has now advanced to the point that many jobs can be performed without much human intervention.<sup>9</sup>

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<sup>3</sup> John J. Wild and Kenneth Wild (2016), *International Business: The Challenges of Globalization*, 8<sup>th</sup> Edition, Pearson

<sup>4</sup> Adam Smith (1776) *The Wealth of Nations*

<sup>5</sup> David Ricardo (1817) *On the Principles of Political Economy and Taxation*

<sup>6</sup> Milton Friedman (September 13, 1970) *The Social Responsibility of Business is to Increase its Profits*, The New York Times Magazine, The New York Times Company

<sup>7</sup> David Ricardo, Op. Cit.

<sup>8</sup> John J. Wild and Kenneth Wild, Op. Cit.

<sup>9</sup> James Manyika (January 17, 2017) *Workplace Automation: Separating Fiction from Fact*, Big Ideas & Innovation

Historically, capital has taken approximately 30% of global income. The remaining 70% has been the wages of workers (with notable short term fluctuations).<sup>10</sup> AI and robots can be classified as capital in the context of this discussion. Assuming that they can fully substitute for human labor, their presumed efficiency would drive the value of human labor, as we currently view it, to near zero. The share of income taken by capital would approach 100%.<sup>11</sup> The effects of these technologies on the need for labor are forcing us to again confront society's assumptions vis-à-vis the value of human endeavor. We are approaching a strategic inflection or tipping point.

### **Current Events:**

The evidence of the tipping point is plentiful. A Japanese life insurance company, Fukoku Life Insurance, announced earlier this year that it had replaced 30 workers with IBM's AI technology.<sup>12</sup> A recently introduced Sewbot™ by Software Automation is forecast to eliminate millions of jobs in clothing manufacturing.<sup>13</sup> The White House published a report in 2016 that 2 to 3 million car, bus and truck driving jobs will be eliminated by self-driving vehicles in the coming and not-too-distant future.<sup>14</sup> Oxford published a study in 2016 that suggested that about 47% of all U.S. employment could be replaced by machines over the next two decades.<sup>15</sup> Those jobs up for replacement ranged from bartenders to loan officers. McKinsey Global Institute thoughts were summarized in a recent Wall Street Journal article as follows: "Despite claims that robots are coming for our jobs, only 5% of all occupations are at risk of being entirely automated. Rather than disappearing, the report's authors say, jobs will change dramatically, forcing workers to adapt. McKinsey's analysis of 800 occupations and 2,000 job tasks predicts that half of workers' current tasks could be automated by the year 2055 using technology that currently exists."<sup>16</sup> That same Wall Street Journal article quotes Accenture that "it is up to corporate leaders to help workers hone their skills for jobs that rely on such human capabilities as social and emotional intelligence. Doubling the pace of strategic retraining efforts would reduce the share of jobs vulnerable to automation"<sup>17</sup>

Despite the Accenture quote offering strategic worker retraining as a displacement solution, it is difficult to see how corporations could undertake retraining the 2 to 3 million who lose their jobs to autonomous vehicles. It is similarly unlikely that strategic worker retraining will be in place to assist the estimated millions of low wage workers who will lose their jobs to the Sewbot™ and similar robots in clothing manufacturing companies. More generally, corporate goals are set in a laissez-faire economic system

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<sup>10</sup> Nick Bostrom (2014) *Superintelligence: Paths, Dangers, Strategies*, Oxford University Press

<sup>11</sup> Ibid.

<sup>12</sup> Business Insider (January 6, 2017) *10 Things in Tech You Need to Know*

<sup>13</sup> Mark Allinson (October 1, 2016) *Sewbots prepare to take millions of jobs off humans in clothes manufacturing sector*, Robotics & Automation News

<sup>14</sup> Executive Office of the President of the United States (December, 2016) *Artificial Intelligence, Automation, and the Economy*

<sup>15</sup> Business Insider (August 11, 2016) Referencing work by C. B. Frey and M. Osborne, University of Oxford and Morgan Stanley Research

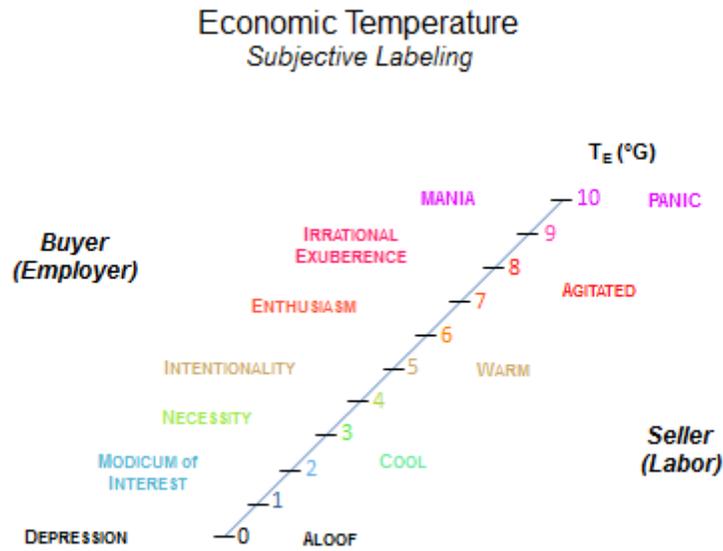
<sup>16</sup> Lauren Weber (January 17, 2017) *Three New Predictions for Automation and Jobs: Jobs will change, forcing workers to adapt and global productivity will rise*, Wall Street Journal

<sup>17</sup> Ibid.

steeped in the Friedman’s philosophy. The challenges and costs of retraining on such a scale do not fit easily into the corporate enterprise strategy of profit maximization.

The evolving economic conditions were recently summarized as “evolving in ways that will make it more and more difficult for people with lower levels of education to find jobs and support themselves. It’s a boiling pot getting hotter one degree at a time. And we’re the frog.”<sup>18</sup> The temperature is rising.

**Looking Forward:**



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Employers, using capital to displace labor, are already deploying robots and using AI for efficiency. It is possible to see a world with a soaring GDP using machines powered by technical advances from AI—and simultaneously a world of 9-10 billion people with the income share of labor reduced from 70% to near zero.<sup>19</sup> The above chart, originally developed to describe consumer-producer economic temperatures and the gradient between them that drives cash flow in market transactions, has been adapted to employer-labor markets to illustrate labor employment dynamics in an AI and robot dominated work environment.<sup>20</sup> A low buyer temperature (cold) indicates little interest. A high buyer temperature (hot) indicates great interest. In this example, the “Buyer” is the global employer. The “Seller” is the global work force. With few jobs for humans, the employer interest/temperature would be low, someplace between a ‘modicum of interest’ and ‘depression’. The labor interest/temperature would be hot and near ‘panic’. Today’s labor market is arguably warming toward agitated and is reflected in the rising populism around immigration and jobs. We are, indeed, the frog. The permanent reduction of the

<sup>18</sup> Andrew Yang (February 7, 2017) *Silicon Valley Is Right—Our Jobs Are Already Disappearing*, Editor’s Picks, Entrepreneurship, Technology.

<sup>19</sup> Nick Bostrom, Op. Cit.

<sup>20</sup> Arthur Jonath and Richard Goldwater, Profit and Entropy, and Fred Khorasani, Khorasani and Associates (2017 Paper in Progress) *Consumer-to-Producer Temperature Gradient: A New Indicator of Expansion and Contraction*

income share of labor by AI would introduce a long-running disequilibrium in this temperature gradient example, likely to be first observed by pressure to reduce wages toward subsistence level for the jobs that exist and eventually few jobs. The social pressures from this eventuality would be massive. The irony is that this same AI driven future environment, with the leverage of capital, is capable of powering humans to “rich beyond the dreams of avarice”.<sup>21</sup> The question quickly turns then to a method of income distribution. It is likely that the “temperature” of this debate will intensify quickly in the next decades.

### **Conclusion:**

The debate on how to deal with this future has begun. Bill Gates recently suggested that employers using robots should be taxed to “temporarily slow the spread of automation and to fund other types of employment”<sup>22</sup> Finland is experimenting with a guaranteed income.<sup>23</sup> The Economist argued earlier this year that Ricardo’s Comparative Advantage Theory in practice was still better than isolationism.<sup>24</sup> That debate should include a new look at economic theory, including perhaps the thermo-economic theories discussed in this conference. Previous theories were developed with the views, philosophies, and science of the time. They worked, however imperfectly, for a period of time. Events and advancing technology have led us to new practical realities and new market dynamics that do not fit the underlying assumptions inherent in the existing, dominant theories. AI and robotics promise a very radically different future from any past experience.

Existing economic “dynamic stochastic general equilibrium (DSGE)”<sup>25</sup> models “accept the traditional view that there exists some ideal equilibrium towards which all prices are drawn. That this is often approximately true is why DSGE models perform well enough in a business-as-usual economy. They do badly in a crisis, however, because their “dynamic stochastic” element only amounts to minor fluctuations around a state of equilibrium, and there is no equilibrium during crashes.”<sup>26</sup> It is a compelling argument that we need a new theoretical and philosophical basis upon which to revalue human endeavor and measure economies. It is important to remember as we engage in this debate that *Wealth of Nations* and the Comparative Advantage Theory were both radical when they were proposed and did not fit easily with the dominant economic theories that they displaced. It is likely that the next economic theories will not fit easily with past views. This conflict should not slow the debate. Nine billion people are depending on the answer.

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<sup>21</sup> Nick Bostrom, Op. Cit..

<sup>22</sup> Kevin J. Delaney (February 17, 2017) *The Robot that Takes Your Job Should Pay Taxes, Says Bill Gates*, Quartz Media LLC [US]

<sup>23</sup> Ivana Kottasova (January 3, 2017) *Finland Is Giving 2,000 Citizens a Guaranteed Income*, CNN Money U.S.

<sup>24</sup> The Economist (April 22, 2017) *Free Exchange: Donaldson’s Difficult Idea. The Law of Comparative Advantage at 200: Still Winning Prizes*, The Economist

<sup>25</sup> The Economist (July 22, 2010) *Agents of Change*

<sup>26</sup> Ibid