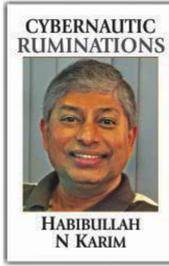


Can robots and humans co-exist peacefully?



CYBERNAUTIC RUMINATIONS
HABIBULLAH N KARIM

ONE of the biggest civilisational questions dangling in the air is when will machine intelligence overtake human intelligence. Popularly defined as the technological singularity event—the tipping point when machines will overtake humans in terms of intelligence—it may occur within the lifetime of people born in the seventies or later. The most famous prophet of

nanotechnology and biotechnology. A hundred years ago, the word “computers” referred to human accounting assistants who used to compute numbers by hand. Those human computers have long been replaced by ubiquitous machine computers and calculators. Except science historians, I would doubt very much whether a regular person today even knows that once computers were humans. That has not dampened our enthusiasm for computers in all forms and fashions, from the “big irons”—the super high-performance mainframes—to the super high-tech smartphones. Pretty much everyone thinks of computers as productivity tools and personal aids; nobody in their right mind thinks of computers as a threat.

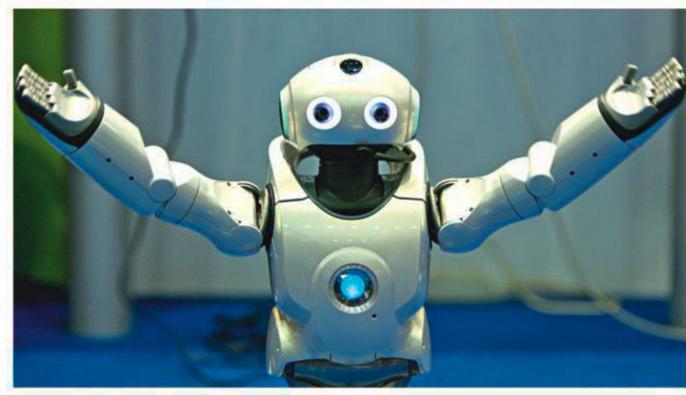


PHOTO: MAX ROSSI/REUTERS

as real as the virtual avatar of Superman's father in the eponymous movie. This means, with enough data on the memories, personality profile and knowledge of our near and dear ones, we could let them live virtually for ever.

A couple of years ago, the robot Sophia showed her conversation prowess in front of Dhaka crowds, but in between lines, you could tell you are talking to a parrot reciting from memory or stock phrases and as such it was not that overwhelming, but when IBM's AI-powered computers Deep Blue and Watson took on the world chess and trivia champions and beat them hands down, the world was shocked at how far AI has progressed. That was twenty years ago. Obviously, AI has advanced more rapidly in recent years and current AI incarnations are literally generations ahead of Deep Blue and Watson. So, should we be afraid of a robotic take-over in the near future as portrayed in the movies “Terminator” and “I, Robot”, or should we bank on Kurzweilian brain-extensions through a combination of nanotechnology and biotechnology to keep pace with machine intelligence in the future? The jury is still out on this one but what is certain is that human civilisation will inexorably be intertwined with advancements in robotics making for a very different style of living and dying within a couple of generations.

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Should we be afraid of a robotic take-over in the near future as portrayed in the movies “Terminator” and “I, Robot”, or should we bank on Kurzweilian brain-extensions through a combination of nanotechnology and biotechnology to keep pace with machine intelligence in the future?

technological singularity in our times is scientist-writer Ray Kurzweil who, in 2008, founded the Singularity University in California to advance the study of technological singularity and at the same time explore how humans can keep up with machine intelligence through exponentially developing

Then why do we get so worked up over robots? Robots are simply computers with gears. May be its their humanoid forms, animal-like locomotion or almost human-like chatting ability—capabilities once thought to be confined to intelligent animals and humans—that are no longer sacrosanct. When you add to the mix the real possibility of such machines taking over humans in terms of intelligence, then the spectre of a machine Armageddon takes over popular imagination. The fears are not without reason. Intelligent chat-bots can now answer routine questions from automated call centres while the human clients are usually unaware that they are talking to machines. Robotic process automation, or RPA, is slowly taking over many routine document processing functions in banking, insurance, libraries, government archives and other places. Such document processing is the mainstay of business process

outsourcing, or BPO in short, which has been a goldmine of white-collar jobs and export revenues for developing countries such as India, Philippines and Vietnam in recent years.

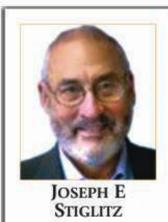
Artificial Intelligence (AI) has the potential to completely kill off this industry in the next two to three decades. On the other hand, hazardous works like welding and handling noxious chemicals have been going to robots steadily over the years. This is certainly a welcome development as it frees human workers from unhealthy and dangerous work. What is disconcerting though is that many high-level professional functions such as legal research and advising, stock market research and brokerage and medical questions and answers (Q&A) are being routinely performed by computers these days in the technologically uppity countries, a trend that is bound to find its way into other countries including ours in a few years.

However, the real white-collar job scare comes from news snippets these days on robo-chefs and robo-surgeons as these were thought to be the bastions of human finesse and creativity safe from robotic invasion. A pricey robotic chef now can prepare a gourmet meal from pre-set menus based on signature recipes by famous chefs. High-end precision robotic arms can these days carry out surgeries under the watchful eyes of human surgeons. This technology is still in its early iterations, but in a few years, robotic surgeries may become routine. What this means is that all types of professional jobs are fertile grounds for robotic and AI incursion.

AI laboratories have in recent years also mapped human minds—human memories, personalities and knowledge—in order to replicate the human persona virtually. Some of these experiments have come up with virtual avatars of real human beings that are frighteningly life-like, almost

PROJECT SYNDICATE

How can we tax footloose multinationals?



JOSEPH E STIGLITZ

IN the last few years, globalisation has come under renewed attack. Some of the criticisms may be misplaced, but one is spot on: globalisation has enabled large multinationals, like Apple, Google, and Starbucks, to avoid paying tax. Apple has become the poster child for corporate tax avoidance, with its legal claim that a few hundred people working in Ireland were the real source of its profits, and then striking a deal with that country's government that resulted in its paying a tax amounting to .005 percent of its profit. Apple, Google, Starbucks, and companies like them all claim to be socially responsible, but the first element of social responsibility should be paying your fair share of tax. If everyone avoided and evaded taxes like these companies, society could not function, much less make the public investments that led to the Internet, on which Apple and Google depend. For years, multinational corporations have encouraged a race to the bottom, telling each country that it must lower its taxes below that of its competitors. US President Donald Trump's 2017 tax cut culminated that race. A year later, we can see the results: the sugar high it brought to the US economy is quickly fading, leaving behind a mountain of

debt (which increased by more than USD 1 trillion dollars last year). Spurred on by the threat that the digital economy will deprive governments of the revenues to fund function (as well as distorting the economy away from traditional ways of selling), the international community is at long last recognising that something is wrong. But the flaws in the current framework of multinational taxation—based on so-called transfer pricing—have long been known. Transfer pricing relies on the well-accepted principle that taxes should reflect where an economic activity occurs. But how is that determined? In a globalised economy, products move repeatedly across borders, typically in an unfinished state: a shirt without buttons, a car without a transmission, a wafer without a chip. The transfer price system assumes that we can establish arms-length values for each stage of production, and thereby assess the value added within a country. But we can't. The growing role of intellectual property and intangibles makes matters even worse, because ownership claims can easily be moved around the world. That's why the United States long ago abandoned using the transfer price system within the US, in favour of a formula that attributes companies' total profits to each state in proportion to the share of sales, employment, and capital there. We need to move toward such a system at the global level. How that is actually done, however, makes a great deal of difference. If the



formula is based largely on final sales, which occur disproportionately in developed countries, developing countries will be deprived of needed revenues, which will be increasingly missed as fiscal constraints diminish aid flows. Final sales may be appropriate for taxation of digital transactions, but not for manufacturing or other sectors, where it is vital to include employment as well. Some worry that including employment might exacerbate tax competition, as governments seek to encourage multinationals to create jobs

in their jurisdictions. The appropriate response to this concern is to impose a global minimum corporate-income tax. The US and the European Union could—and should—do this on their own. If they did, others would follow, preventing a race in which only the multinationals win. Since its inception, the OECD/G20 Base Erosion and Profit Shifting Project has made an important contribution to rethinking the taxation of multinationals by advancing understanding of some of the fundamental issues. For example, if

there is true value in multinationals, the whole is greater than the sum of the parts. Standard tax principles of simplicity, efficiency, and equity should guide our thinking in allocating the “residual value,” as the Independent Commission for the Reform of International Corporate Taxation (of which I am a member) advocates. But these principles are inconsistent either with retaining the transfer price system or with basing taxes primarily on sales. Politics matters: the multinationals' objective is to gain support for reforms that continue the race to the bottom and maintain opportunities for tax avoidance. Governments in some advanced countries where these companies have significant political influence will support these efforts, even if doing so disadvantages the rest of the country. Other advanced countries, focusing on their own budgets, will simply see this as another opportunity to benefit at the expense of developing countries. The OECD/G20 initiative refers to its efforts as providing an “Inclusive Framework.” Such a framework must be guided by principles, not just politics. If the goal is genuine inclusiveness, the top priority must be the wellbeing of the more than six billion people living in developing countries and emerging markets. Joseph E Stiglitz is the winner of the 2001 Nobel Memorial Prize in Economic Sciences. His most recent book is “Globalization and Its Discontents Revisited: Anti-Globalization in the Era of Trump.” Copyright: Project Syndicate, 2019. www.project-syndicate.org (Exclusive to The Daily Star)

ON THIS DAY IN HISTORY

February 18, 2004
UKRAINIAN REVOLUTION BEGINS

Ukrainian Revolution of 2014 begins as protesters, riot police and unknown shooters take part in violent events in the capital, Kiev, culminating after five days in the ouster of pro-Russia President Viktor Yanukovich

CROSSWORD BY THOMAS JOSEPH

ACROSS	30 Herring's kin	10 Be inquisitive
1 Outcast	31 Secluded valley	14 Hospital worker
7 Tibetan monk	32 Filch	16 Writer Verne
11 Plummer of "Pulp Fiction"	34 Kid's construction toys	17 Heap of fiction
12 Weary word	40 Region	20 Car trip
13 Chicago attraction on Lake Michigan	41 Became frosted	21 Fare carrier
15 Top grade	42 Sailing boat	22 Crunch targets
16 Equitable	43 Tennis star Williams	23 Golfer's need
18 Tear asunder	DOWN	25 Augment
21 Make well	1 Buddy	28 Scoundrel
22 Declare	2 Bordeaux buddy	29 Hoedown figure
24 Boxing great	3 Operated	31 Hoedown, e.g.
25 Presidential nickname	4 As a precaution	33 Yale students
26 Pizzeria buy	5 Take as one's own	34 Put down
27 Chin covers	6 Foyer	35 Lyricist Gershwin
29 Spelunking site	7 Expires	36 Original
	8 In the style of	37 Horace creation
	9 Ruin	38 Rifle or revolver
		39 Place to relax

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YESTERDAY'S ANSWER

A	D	A	M	S	L	A	S	E	R
P	I	V	O	T	O	X	I	D	E
T	E	A	R	Y	W	E	D	G	E
U	N	C	L	E	S	A	M		
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S	Y	S	T	E	M	A	S	T	A
S	T	E	A	L	T	H	Y		
S	A	P	S	A	R	I			
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A	D	I	E	U	S	T	O	V	E
M	A	N	E	T	E	S	S	E	X

BEETLE BAILEY by Mort Walker

HOW DEEP DO THEY WANT US TO DIG?
WHO KNOWS? IN AFRICA, THEY DIG DOWN A MILE TO GET DIAMONDS.
WOULDN'T IT BE EASIER JUST TO GO TO A JEWELRY STORE?

BABY BLUES by Kirkman & Scott

ONCE THE PAINT DRIES, WE'LL START ASSEMBLING THE MODEL!
UH-HUH.
ISN'T THIS FUN, HAMMIE?
DAD, WE'RE WATCHING PAINT DRY.
YEAH, I'M HAVING A GREAT TIME, TOO!