

Emerging Technologies and the Problem of Leadership in the 21st Century

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It may be inevitable that policy communities tend to be pre-occupied with the past. It is not because they lack intelligence or dedication. One reason certainly lies in their falling victim to the Fallacy of the New Normal. We look back and see dramatic change in just a few years, and we see a curve that keeps getting steeper as it rises toward today. But a survival instinct of the human mind – understandable, but potentially fatal - prevents us from looking ahead and expecting the process to continue. We kink the curve. We flatten it. We work on the assumption that today's "new normal" is our starting-point, and the working principle that while there is change ahead it will be far less dramatic than that of past years. Of course, in the cases of political leaders and the policy community that sustains them, there is accountability to the people. And, among the people, the same tendency is clear, and may be more pronounced.

The Significance of the Emerging Technologies Revolution

The new technologies that have been unleashed in recent decades have many labels, and span the sciences and technologies. Most of them have one powerful factor in common: they are digitally driven. That is increasingly true of the biosciences even as it has long been true of engineering. While there are important areas of our lives that have been essentially unaffected by these changes (cooking, hiking) in general technology is incrementally infusing almost all aspects of our personal and social experience, and the life of the global community. The most recent recognition of this fact is that of Klaus Schwab, famed founder of the World Economic Forum at Davos, who has christened these developments The Fourth Industrial Revolution. There are reasons why this may not be the best way of summarizing things (labels of this kind are always problematic), but it's clear that something fundamentally new is afoot and driven by the digital explosion that we associate with Moore's Law. And while there is evidence that Moore's Law is in fact now slowing down, the exponential brakes are off.

There are so many potential examples, not least of technology developments with potentially powerful impacts on policy that threaten to upend standard approaches.

For example, look at the two least innovative sectors of the economy – which are vastly costly to governments: education and healthcare. From nanobots in the bloodstream to the use of IBM's Watson computer for diagnosis (it has already consumed literally millions of medical journal articles) to the use of robotics for surgery the future of the medical enterprise is ripe for massive change. We may need many fewer doctors. And, of course, both medical and social patient care will be aided by robots as soon as their cost becomes one cent an hour cheaper than that of human labour.

As to education, Harvard guru Clay Christensen, the world's leading thinker about organizations and innovation, has forecast that within 15 years half of U.S. colleges will have gone bankrupt. Meanwhile, the advance of MOOCs with in due course Virtual Reality integration are already offering completely different models, some involving zero marginal cost.

As to employment, government's first obligation after defence, despite a pathological refusal to take seriously the risk implications of fast-moving developments in AI and robotics governments will soon be faced by, at best, a massive disruption as traditional jobs of many kinds go the way of the rust belt industries. Whether new kinds of jobs emerge we really do not know; the disruption however will be real and dramatic. And, for example, 3-D printing may have dramatic implications for trade as end-users "manufacture" their own goods.

Security issues, both national and personal, will become far more challenging as a result partly of continuing digitization efforts that have made "cybersecurity" the core security threat as we move into cyber-physical systems (the Internet of Things). In parallel, advances in synthetic biology may enable teens to have the capacity to create novel bio-organisms.

On the human genetics front, the rapid development of CRISPR technology offers extraordinary promise for our ability to re-engineer life at the genetic level. This is already acknowledged to be hugely problematic.

This list is of course simply a sampling of some key developments. Policy-makers, and political leaders, who fail to look forward stand no chance of managing the change that is afoot.

The Crisis in Liberal Democracy

The hollowing out of confidence in the democratic process has been common to the democracies over the past generation and has various causes. In parallel, we have seen the rapid emergence of authoritarian approaches in the "new democracies" - Russia, some of the new central European states such as Poland, Hungary, Slovakia, and also Turkey.

But the crisis is most evident in the United States, where a process is well-advanced that I have named "exopolitics" - the emergence of a politics outside (exo) politics. Falling public confidence in political leaders and the institutions of government are creating an essentially revolutionary situation, offering unparalleled opportunities to unconventional leaders who offer to break the mold of traditional approaches. Both Donald Trump and Bernie Sanders are examples, as is the now faded No Labels movement to find a third party presidential candidate. In Europe, meanwhile, the rise of Marine LePen and the National Front in France, the emergence of UKIP in the UK and such developments as the Pirate Party in Sweden all illustrate the same point: with the slow decay of public confidence, strident new leaders from outside the political mainstream gain exopolitical traction.

The statistics are telling. Is Government "run by a few big interests...or for the benefit of the people?" In the US, 80% say the big interests, 19% for the people. (World Public Opinion, 2008.) The most dramatic and salient number is this: the level of real trust in various professions. Nurses rate 90%. Doctors 65%. Members of Congress? 7%. (Gallup, 2014.) That is one lower than the level of confidence in auto salespeople, which stands at 8%. Is Canada much different? Surprisingly, I hate to say, it is not. Here nurses score 81%, doctors 80%. Politicians? 10% (Ekos, 2013.)

On the Trump phenomenon, a plain outcome of this revolutionary situation and the exopolitical dynamic, here are some fascinating observations. First, from risk guru Nicholas Taleb, author of *The Black Swan*. "People are not voting for Trump (or Sanders). People are just voting, finally,

to destroy the establishment.” And from leading public intellectual and feminist Camille Paglia, who personally favours Sanders. “Trump’s fearless candor and brash energy feel like a great gust of fresh air, sweeping the tedious clichés and constant guilt-tripping of political correctness out to sea. Unlike Hillary Clinton, whose every word and policy statement on the campaign trail are spoon-fed to her by a giant paid staff... Trump is his own man... He has a swaggering machismo that will give hives to the Steinem cabal. He lives large, with the urban flash and bling of a Frank Sinatra.”

Point is: democracy is getting thinner at the very moment when we need it to thicken and make heavier demands on our public leaders – as the fruits of this great technological revolution are thrown off with increasingly disruptive rapidity.

Moreover, the standard axes of 20th century western politics – from small to big government, from lesser to greater redistribution – seem less and less relevant.

Some Taproots of a Solution

- A. We need to engage the political community to shift slowly the “corporate culture” that is both backward-looking and disinclined to take the implications of technology seriously. Hence the strategic importance of ventures like ISSP and C-PET.
- B. Engagement with the business community. The fundamental choices in the development and application of ETs are increasingly being made not by policy-makers but by technologists, entrepreneurs, and investors. And for them, as they seek in the creation of value returns on their investments of effort and cash, it is important to point out that ultimately values drive value; and the more innovative and disruptive a product, the more significant is that principle. The ghost of GMO food should haunt the feast.
- C. The cultivation of a new kind of leadership. Alfred Lord Tennyson, doyen of 19th century English poets, in his futuristic poem Locksley Hall (1835) – a poem quoted on the wall of the U.S. House of Representatives Science Committee Room – also states this sobering principle, yet truer in our day than his: “Knowledge comes, but wisdom lingers.” What kind of leadership do we seek, that is well able to grapple with technology and change, and yet with wisdom? The solution is not rule by geeks, neither is it the vision of “direct democracy” in which the people vote on everything in place of sending representatives to manage the business of government. We seek a revivification of democracy, with representatives in all our parties who can grasp and engage these issues and engage with the future as the agenda for the present.

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