



Dumbing Down For AI

By Leopold B. Willner PhD 5/26/2019

Is the ongoing dumbing down of our population, visible in many aspects of life these days, including our schools, factories and even the cockpits of our commercial jets, a good idea? Is substituting AI methods for human decision making and cognition the way to go, or is there another way to make progress and ensure a better future?

One way to make AI seem valuable, essential and capable is to place it in contrast with an ever dumber less able human population. Such a perception is likely to lead to a growing dependence on more AI tools and further automation. This is a tendency that is blossoming all around us as a part of the natural evolution of technology which seems innocent and harmless enough in the passing. In fact, that may not be so, as it may funnel mankind toward an ever-greater reliance on advanced machines that point toward a riskier less humanistic world.

A proper risk assessment of such a prospect and its long-term consequences is still in its infancy. As a consequence, we could become the unwitting victims of serious unintended consequences as AI progresses without the ample oversight needed to make it safe and helpful. Thus, dumbing down the capabilities of humans may not be such a great idea. And who among us is standing watch to preserve established safe practices?

Many questions and few answers are at hand, while much hubris on the benefits of AI

technology that is housed on a shallow foundation remains in vogue with the media and the public. Did the lady killed by the self-driving car in Arizona have any warning or say in the matter? Of course not.

Did anyone have much of a heads up from Boeing on the risks that triggered the AI involved Boeing 737 Max 8 crashes in Ethiopia and Indonesia?

Indeed, who conjured up the idea that you could take the 1960s design of a 110 passenger 737 and employ its old fuselage and wing configuration along with bigger engines to create a safe and airworthy 220 passenger 737 Max 8? Especially as the larger engines now required would in this configuration tend to force the nose of the 737 MAX8 upward on takeoff, thereby creating a stall-prone condition needing a fix? When using AI in this manner is foolish at best.

To question the faultiness of the AI automation software intended to force the nose of the airplane back down, without pilot knowledge or intervention, is misleading. The AI system, while itself flawed and badly in need of a fix, should not be employed to overcome the Max 8's jury-rigged redesign. The error is using an outdated design that necessitates a sophisticated AI system to overcome a dangerous tendency to nose-up, stall and force a crash; of an airplane with oversized engines forced to carry far more passengers than its redesign enables!

A secondary erroneous idea is to believe that AI fixes can and should ever be employed in such a risky way; say in robotic brain surgery and airplane design. Why not avoid faulty design ideas that require such fixes altogether; as in the more modern 'fly by wire' Airbus A320 that so ably competes with the Boeing 737 Max 8?

Thus the FAA and Boeing are the main culprits in the two recent crashes that killed 346 folks, not by chance, but by faulty design. So too is the

Silicon Valley and the AI centers at Carnegie-Mellon, MIT, Northwestern and Stanford. As these media sources may inadvertently propagate short-sighted hubris about AI and its role in high-risk real-world situations, say surgery and transportation.

As to other improper uses of AI, the Financial Times recently reported that there are at least twenty-two countries now designing and building autonomous AI based weapons systems that can kill humans, without human input or intervention at the point of action.

The same reasoning applies to the dumbing down of pilots who are not fully aware of their jets AI capabilities in systems that may override their actions and command an aircraft into a deadly spiral. This kind of tragedy is but one case in point, and there are others.

The same applies to computer and AI based education, where school children are no longer expected to be proficient at arithmetic, spelling or even content-based reading. Children who speak and text in cryptic phrases and not sentences, and who are more adept at communicating than at reasoning. How will they manage their future affairs in a high-risk world of dangerous politics, global warming, pollution, adulterated food, and an environment populated with all sorts of risk? Will dumbing them down not create more risk like the ones that were so clearly displayed at Boeing?

With all of that in mind now is a good time to return to first principles and cast a clear eye on the state of affairs in automation and AI. Few may recall that America was extremely successful in the 1960s and 1970s without todays computers, the Internet or AI. Indeed, incomes in terms of real purchasing power were higher, while life seemed less hurried and stressful. This suggests that rushing forward pell mell into questionable AI practices should be

limited, and, as necessary, involve a good deal of in-depth analysis and quality field testing.

Reflecting on this, some of the more useful aspects of AI and its employment in a broad-spectrum light suggest testing and possible implementation along the following lines:

1. Human vs Machine Intelligence - It seems a fallacy to assume that there is but one kind of intelligence possible in the universe, and thus that any advanced intelligence must be of the same genre as human intelligence. If so, having machine intelligence and AI mimic human intelligence may at times be counterproductive and misguided.
2. Dual Stream Methods – Where possible, when two forms of intelligence are available to a given line of inquiry – say human and machine - it may be most helpful to triangulate the solutions and cognitions of the two in order to obtain a better result, especially when the two disagree.
3. AI Training Tools – Used in face recognition, game playing and the like. Such methods are helpful as a way of creating algorithms that can work well when big data is at hand AND the system is either deterministic or has known probabilities. If not, then perhaps not also!
4. AI Solutions – May not offer up an appreciation of what they are suggesting as answers to problems or queries. That is, instead of merely revealing, by aping, some potentially useful data driven patterns and little more - as a parrot might when mimicking human speech and nothing more.
5. Ascribing Understanding or Judgment to AI Today - At the current state of AI technology there is little basis for believing that such methods can, with confidence, provide results that are equivalent to human judgment based on human experience and human values.

6. Context is Essential - Unless and until an AI system can capture and properly apply context to a problem, event or situation, any conclusions it may draw are subject to missing the mark and being prone to a high risk of error.
7. Consex – Meaning Context Sensitive Execution, of a result, action or solution, is a necessary condition for taking an effective action, as in doing the right thing, while avoiding missing or failing to grasp a situation or opportunity by AI or by a human.
8. Risk vs Uncertainty - Computational and analytic methods are most helpful in assessing a fixed level of risk and determining how it may be managed. However, when real uncertainty is afoot in the real-world similar methods are less likely to be helpful – as with 9/11 and the market crashes of 2008.
9. Decision Making Under Uncertainty - Herein, when analytics fail to satisfy, experience, intuition, common sense and good judgment can help to make up the difference. Therein, human capabilities are and are likely to remain far beyond the near-term horizon of AI systems.
10. Man-Machine Cooperation - Systems that effectively combine, contrast and confound the strengths and weaknesses of human as well as machine cognition hold the promise of a better way to identify superior less risky solutions to many problems.
11. Answers and Reasons – When experience, senses, feelings and intuition are added to data based analytic results, better outcomes may be made possible. Indeed, there are reasons that at times the reason may not know, which underscores why another approach may work better. As a way forward that may be useful when reliable data is poor or sparse.

When these and other such observations are taken into account it is easier to appreciate that there lies ahead a long road for AI and man that must be traversed together for the sake of a better more secure humanistic future. In counterpoint, failing to do so is sure to have dire unintended consequences. As has been observed repeatedly by leading AI thinkers, ‘the only real intelligence in AI today is in its name’.

Instead of dumbing down humans in an unplanned way, it may be far more useful to bring mankind into the loop alongside AI systems, and do so in ways that can further empower AI for the benefit of all. Such an ongoing process needs to be carefully choreographed as a symbiotic dance for two kinds of intelligences supporting and reinforcing each other to produce better outcomes; also, to set the stage for possible future encounters elsewhere among the stars.

Leopold B. Willner, PhD May 26,2019
 Dual Stream Technology, Inc.
From AI to Intelligent Behavior

leo@dualstream.tech dualstream.tech