



Qwyit and Artificial Intelligence

Part I – What is AI?

Lately, AI is all the rage. You've got Elon telling us it's the "fundamental risk to the existence of human civilization". (Whoa!) You've got Kevin Kelly of Wired saying that, basically, AI is a myth. Of course, both of them are dead-on. But, there's just one little problem: They're all missing the point. They've all been distracted by focusing on where the light is shining, instead of the reality, the totality, of the application: What We Do.

Let's name some of the biggest AI successes to date: *DeepMind*, *DeepCoder*, *DeepQA (Watson)*, *AlphaZero* (DeepMind sibling!). (I'm going 'deep' here...!!) OH – let's not forget *HAL* from 2001: *A Space Odyssey*. I know what you're thinking: *<HAL wasn't real, Paul - you Bozo!>*. No, 'he' certainly wasn't – but since human art is usually centuries ahead of human understanding, I've included 'him' here to make a point:

You Don't Know AI!

That can mean a whole lot of things:

- 'I know more about it than you, so I'm right' (ala Elon to Mark Z.)
- 'You haven't seen it work like I have, so I'm right' (ala all the AI dev teams to us mortals)
- 'The philosophy of intelligence will expand, so I'm right' (ala all the pseudo-intellectuals to themselves)

Here's the thing: Computers work really, really well. They are experts at finite systems. You know – like Chess, Go, poker, Jeopardy questions (all those machines above recently kicked our human you-know-whats in those finite games!) – just about...no, scratch that – emphatically: *every piece of completed AI to date is nothing more than really good computing within finite systems*. We've confused...scratch that again – we've self-congratulated ourselves into thinking/believing that what we've built (and are trying to build) are actually capable of doing anything other than what we already do: everything. Every. Single. Thing. We already range from Hitler to Ghandi, from miracle drugs to instant life-extinguishing poisons, from blood banks to nuclear weapons. There isn't an infinite system that we aren't already engaged in. Whatever new AI we create, will simply be right there, engaging in it too!

To date, AI success is nothing more than great computing. Exponential improvement on little bits of what we think we know. The future of AI is where we start to delve into our infinite systems. You might think I'm a bit off, but what about this:

Boston Dynamics has built, and is building, robot dogs that can learn to 'do stuff'. Awesome! One of their latest videos has two dogs, learning to open doors, overcome obstacles, even (*Holy Cow!*) working together: holding their conquered door open for each other to pass (*OMG! Learned Cooperation!*). And this, both frightens and emboldens us into all sides of this 'AI Future'.

Great – So I've got a 'robot dog' that, without *any learning whatsoever*, knew just where to run down a river bank, enter and retrieve the ball I tossed through a gusty wind into moving river water from 100 feet away, and bring it back to my feet within 5 seconds. Oh – and my dog majored in The Humanities in dog college, so he doesn't know much math and rocket science to have 'calculated' all the data, crunched the numbers, and then reacted to them to know *exactly how to do it*. Dumb dog. I'll bet those Boston Dogs, once they waterproof those bad boys, they'll be able to do it too! Another finite system. Great computing...and not a bit of the slobbering mess I get all over my hands from 'my dog'!



For the scientific – let’s go a bit ‘deep’: AL (you know, that Turing dude), he came up with The Test: If a buncha people interact with a machine, and can’t tell whether it’s a machine, well, then BINGO! AI! Of course, because we’re a bit ‘smarter than AL’ – it’s been, what, 50+ years, and we’ve ‘made progress’! – we can add the reverse: If a buncha machines interact with a person, and can’t tell whether she’s a person, well, then BINGO! HI! (Human Intelligence...*right?!)* The silliness of introducing a ‘control’ shows the problem’s incorrect assumption: **TIME**.

For AL’s test, *how long do the people/machines get to interact?* I’ve been married more than once: *The Answer Changes Over Time*. If I interact with a machine for 30 minutes, got me! 3 Hours? 3 Years? *When does the answer change?* Soon enough. We’re all wrong – now.

The real scientific test (let’s get crazy, and call it Paul’s Test): When will people be able to tell what intelligence is, when measured infinitely? We’ve already introduced one of our first AI attempts at an infinite system: autonomous vehicles. Everyone’s worried about the Trolley Dilemma *because it’s an infinite problem*. D’oh! And the answer will arrive *over time*. **If you think for more than a second that AI driven vehicles won’t kill people, you’re an idiot.** They’ll kill *less people*, but still *people*. And they will also kill each other; whether they ‘learn’ to, or not. Whether they regret it, or not. Whether *they* build new machines that *they* think won’t (but will), or not.

AI doesn’t do anything other than what we do – whether it does it by accident, by mistake or on purpose. When it does do something different, we won’t even recognize it (Time!). Like my dog trying to read the software code of his new friends.

Part II – Controlling AI

A few years back, I read a fascinating article about how we discovered that an old medieval potion can kill MSRA. Do you think they knew that when they concocted it? Infinite systems are recursive: they include the past as the present, and both as the future. AI can’t imagine the future any more than those crazy medieval potion makers. The best machines that can ever be made...will just equal the best we can ever be. And both of us have a 50/50 shot at the future. Because, after all...it’s infinite.

But there *is* one serious concern about the future of AI – and if Elon wants to ring the alarm bells, here’s the ‘incident report’ that should get him running to the Church Tower: People. Oh, mind you, not the ones building the stuff: ME! (and you too...we’ve both been sent to the Principal’s Office!)

As a security nerd, I’m pretty good at sounding the ‘Intrusion Alarm’. I even got pretty good at ‘guessing’ the future, and almost, sorta, being right. Tooting my own horn just a tad, over 15 years ago, I used to get folks’ attention by telling them that when there’s a robot mowing your lawn – what happens when the 13-yr old kid that’s mad at you for not paying him anymore, learns how to hack into it and make it run over your prize roses?! Then...when I got them to perk up, I’d hit ‘em with the good stuff: What happens when a hacker decides to kill you because he can mess with your pace maker?! (You could hear the audible gasps!!) Then, in 2015/2016, *two* popular TV shows (*The Americans* and *Homeland*) *both killed a US Vice President by doing exactly that!* (Whoa! Sucks to be Vice President, right?!)

People. It’s not the machines we need to worry about, it’s what people might do *if there isn’t perfect (not just good, but perfect – and perfect is unbreakable) network, device and control security; keeping outsiders out, and insiders accountable*. If the AI fails, no matter what the cause (routine, learned – it doesn’t matter), humans better be able to find out how, why, what and where. And it better not be because it’s been weaponized by a human outside agency. (If AI learns how to weaponize itself, we’ll just be dogs trying to read their software code – and we won’t know it when we see it!) This goal, then, is not only The Holy Grail of AI when it is introduced into infinite human systems, if it isn’t there, then AI *should be, and will be rightfully feared*.



More to the point: when in the last couple of years reading all about the AI evolution in Autonomous Vehicles have you read a single – and I mean *one single article* – that instead of questioning Trolleys, compared the famous hacking escapades of a couple researchers *who took control of a late-model car while it was being driven by a human to what could/will inevitably happen when a fleet of sitting-duck AutoCars are just idling in some garage?! AI's going to revolutionize something, alright – but it isn't travel, it's hacking – as we get to watch those cars tootling around wherever some 13yr-old wants! Better get out of the way!*

There is no greater risk to the acceptance of this revolutionary AI next-step commuter's dream than using security systems from the 1970s: just one single hacked crash fatality will, rightly, destroy the \$billion industry before it even begins. And this is just one of the *first* infinite-system AI endeavors. Whoa.

Part III – My AI

If you look up the weather on 3/2/2018 for the Mid-Atlantic region where I live in Northern VA, you'll see that there was a massive, long-lasting wind storm as part of a Nor'easter. The all-time high-wind record was tied at Washington Dulles airport, right outside DC. I happen to have a late-model, 2016 Nissan LEAF (yes, I drive electric and so should *you!*), with their most advanced communication system that connects to one's smart phone. While driving, it notifies you of text messages, and it will read them to you, so as not to interfere with your driving. I happen to also have chosen to be alerted for extreme weather events by text.

So...I'm out on 3/2/2018, get my weather alert, and select READ for the message; which was "High Wind Alert!" If you look up 'wind' in Google's search engine, as in "to wind a clock", that definition finally shows up in the *second* set of 'wind', as a verb, as number 3, fully the 10th definition of the word – and the first where the pronunciation is different, as in 'WHINED'.

Guess how the AI lady announced my 'High Wind Alert'?! Yup...

"HI, WHINED ALERT!"

Remember: You Don't Know AI! However it turns out, we've got a long, long WEIGH to go!!