



Epsilon Theory

THE NARRATIVE

DOWN THE RABBIT HOLE | BY BEN HUNT

Alibaba's AI, JP Morgan's Risky Language & the Nurture of Reality

As part of the ET 2.0 expanded sandbox, I've asked Neville Crawley to write a weekly-ish "Down the Rabbit Hole" column with his observations on what he calls Big Compute, I call non-human intelligences, and the rest of the world calls AI. This is the biggest revolution in markets and the world today.

Neville will be publishing under his own byline in the near future – his commentary continues below.

Enjoy.

-Ben

Video game-playing AI

AI has moved one step closer to mastering the classic video game StarCraft. Google, Facebook and now Alibaba have been working on AI StarCraft players, and last week a team from China's Alibaba published a paper describing a system that learned to execute a number of strategies employed by high-level players without being given any specific instruction on how best to manage combat. Like many deep learning systems, the software improved through trial and error, demonstrating the ability to adapt to changes in the number and type of troops engaged in battle. Non-technical overview via *The Verge* [here](#). Original and fairly accessible technical paper [here](#).

While an AI video game ace may not be world changing in and of itself, progress on AI intra-agent communication and coordination has potentially profound implications for markets as the approach matures, or, as the Alibaba researchers rather poetically note in their paper:

In the coming era of algorithmic economy, AI agents with a certain rudimentary level of *artificial* collective intelligence start to emerge from multiple domains...[including] the trading robots gaming on the stock markets [and] ad bidding agents competing with each other over online advertising exchanges.

And how do agents behave when their game playing becomes stressful? Apparently just like their human creators: Aggressively. Summary of Google's DeepMind finds on this [here](#).

Risky language

For anyone who has ever taken general NLP algorithms, trained them on the information of the broader world and then pointed them at financial markets-type information, you will have noticed that they get kind of sad and messed up. Partly because markets-ese is odd (try telling your doctor that being overweight is a good thing) and partly because finance folks sure do love a risk discussion...and apparently no one more so than JP Morgan Chase CEO Jamie Dimon. In his much re-published [letter to shareholders](#):

It is alarming that approximately 40% of those who receive advanced degrees in STEM at American universities are foreign nationals with no legal way of staying here even when many would choose to do so...Felony convictions for even minor offenses have led, in part, to 20 million American citizens having a criminal record...The inability to reform mortgage markets has dramatically reduced mortgage availability.

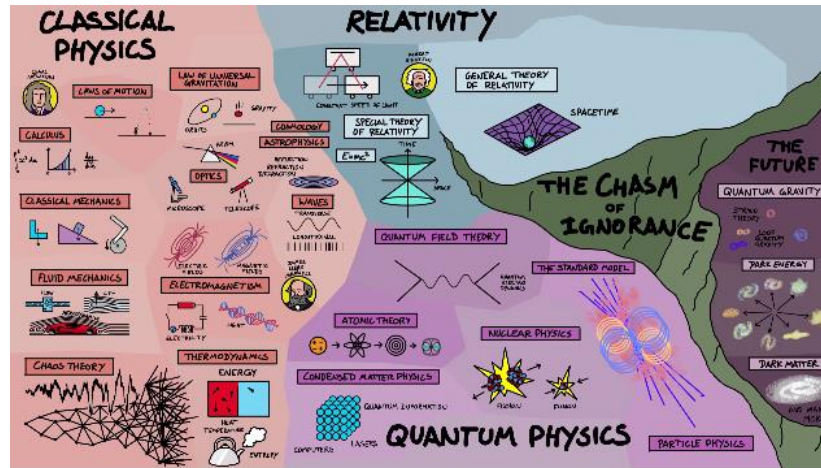
Thanks, Jamie, my algorithm just quit and immigrated to Canada.

The more serious question on this is that as natural language algorithms (of various types) become ubiquitous, at what point do business leaders begin to craft their communications primarily to influence the machine, or at least not include detailed socio-political critiques to accidentally trip it?

The nurture of reality

Clearly, our perception of reality, our world view, is substantially informed by our memories and the stories (links) we tell ourselves about these memories. We are now, for the first time, just starting to get an understanding of how memories are physically stored in the brain. Recollections of successive events physically entangle each other when brain cells store them, as *Scientific American* [reports](#).

[The Map of Physics](#), a joyous 8 minute video by Dominic Walliman (formerly of [D-Wave](#) quantum computing), culminates in the map below with The Chasm of Ignorance, The Future and Philosophy. Walliman points to where we must be operating if we are to break truly new ground (i.e., put the regression models down, please). And if you liked that, keep watching to [Your Quantum Nose: How Smell Works](#).



And, finally, a classic, epic, challenging, practical, piece of prose/poetry from one of the the world's greatest philosophers and orators: the late, great, Tibetan Buddhist meditation master Chögyam Trungpa. Long [treatise](#) on Zen vs Tantra as a system for nurturing the mind:

...the discovery of shunyata [emptiness of determinate intrinsic nature] is no doubt the highest cardinal truth and the highest realization that has ever been known...

Coming next week: The next generation of flash crashes; digital Darwinism and the resurgence of hardware.

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