Technology and Transformation

One ID10T’s view of the future
Gary Larson is a genius!
Catching Up to...
NeuroStar rTMS
Nihon Kohden Polysomnography
MECTA 5000Q Electroconvulsive Stimulator
MUSE
Virtual Reality
VOCERA Staff Communications
Nihon Kohden Vital Sign Monitoring
Cerner Millennium EHR
CIRCADIAN RHYTHMS

WAKE

SLEEP

- Melatonin
- Cortisol
- Core Body Temp
Tunable Lighting
Advanced Imaging at CHE
BEAM: Brain Electrical Activity Mapping
The Near Future
Roy Amara

• We tend to overestimate the amount of change in the short run and under estimate change in the long run.
Roy Amara’s Law
5G

- 20 gigabyte/second; whole Blue Ray movie (25-50 GB) in three seconds
- Sub millisecond latency; essentially instantaneously enabling autonomous vehicles
- Control of remote devices
- Much lower power requirements
Augmented Reality
The Internet of Things
Applications of “Big Data”

Takeaways

**Suicide Risk:**
An opt-in risk assessment and intervention routing system ALREADY exists. We just need to deploy this at scale, through the responsible interface with medical practitioners and social workers.

**Mass Shootings:**
Public surveillance and risk prediction, that ALSO protects personal rights IS possible through proper training. One that enables law enforcement and community preservation, where citizens are innocent, before proven guilty.

**Insider Threat:**
Agencies can incorporate motive models into their behavioral characterizations, rather than be blindsided.

**Funding:**
No government agency has an existing mandate to rise to the challenge.
Suicide as an Epidemiological Example
Robotic Companions
Robotic Therapists
Robotic Attendants
Magnetoencephalography
The Connectome
Gene Therapy and Epigenetics

Gene therapy using an adeno-virus vector

- Cells are removed from patient.
- A gene is inserted into the virus.
- The virus is mixed with cells from the patient.
- The cells from the patient become genetically altered.
- The altered cells are injected into the patient.
- The genetically altered cells produce the desired protein or hormone.
- In the laboratory, a virus is altered so that it cannot reproduce.
Gamma Knife
The “Far” Future
Nanometer Technology
AI and the Singularity

Ray Kurweil
Google’s Director of Engineering
AI will equal human intelligence by 2045

Masayoshi Son
Softbank CEO
Super intelligent machines by 2047

Deep Learning Neural Networks achieving new milestones routinely
Repairing Quorra
Human/Machine Neural Interfaces
This is Not Science Fiction

Invasive and Non-Invasive Neural Interfaces: Forecasts and Applications 2018-2028

Brain machine interfaces and brain computer interfaces

www.IDTechEx.com
It’s Coming Faster Than We Can Imagine
Nanofiber Neural Interface Electrode
Spinal Stimulation
Yin and/or Yang???
Or Simply Fashion?

Would an implantable neural interface from Apple have the same cache as an iPhone?
One Final Thought...

(Bill Watterson)
Philosopher Hobb(e)s

REALITY CONTINUES TO RUIN MY LIFE.