Millennium Project Silicon Valley

Futures Research Projects
Brock Hinzmann, Node Co-Chair
brockhinzmann1@gmail.com
brock@futurealities.com
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Scanning Items 1979

US States are increasingly acting like sovereign nations; parallels the growth in sectional power in Canada, Spain, and the UK.

People frustrated by the inability of government and large institutions to meet their healthcare needs are looking elsewhere for diagnostic and treatment tools they can use themselves.

The FBI and CIA anticipate an increase in terrorism and say that sophisticated computer networks are key vulnerable points.

China is encouraging its billion people to eat more wheat, which may push up the global price. May happen in other industries.

Bank of America has introduced a strict code of conduct for employees regarding loan criteria, intrusion on customer privacy, and conflicts of interest.

Industrialized countries nearing zero population growth are introducing new measures to encourage it.

West German companies are substituting more socially sensitive terms for “profit,” “wage cost,” and “boss.”

Projects/Meeting Attendance

- Follow-up talks on Future Technologies and Work, Silicon Vikings Panels: Innovation in Small Satellites, Futurists
- Chair, ASM International Santa Clara Valley 2016-2017
- Azerbaijan February 2017
- Future Day 2017 and Carbon Hangout
- Visualizing Sustainability Workshop
- Workforce & Learning Pathways Symposium
- 3D Printing in Haiti
- Business Futures Network scanning meetings

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The View From Silicon Valley

- Silicon Valley is more about Global Solutions, less about Global Challenges: “We are inventing the future.”
- Tech will allow us to create the future we want; become whatever we want; “Disruption”
- VC: California $9 billion of US $18 billion Q2 2017
- Investments in internet and semiconductor chip designs for: AI, VR, IoT, drones, robots, AgTech, ‘virtual assistants’, gadgets, digital health, cybersecurity, real estate, blockchain
- Troubles: security, fake news, sexism, racism, traffic, housing
- Bill Reichert: Scenarios need to be informed by the future https://www.garage.com/the-future-aint-what-it-used-to-be/)
- Mike Liebhold: Needs to direct the futures research agenda
- Gil Friend (Chief Sustainability Office, Palo Alto): Visualize the future of sustainability

Disruptions Make Scalable Business

Human workers augmented cognitively (problem solving, solution design), physically (strength to do, skill to make), perceptually (awareness beyond natural sensing).

Fabricated to Farmed

Constructed to Grown

Isolated to Connected

Extraction to Aggregation

Obedient to Autonomous

Source: Maurice Conti, Director of Applied Research & Innovation, Autodesk

https://www.ted.com/talks/maurice_conti_the_incredible_inventions_of_intuitive_ai

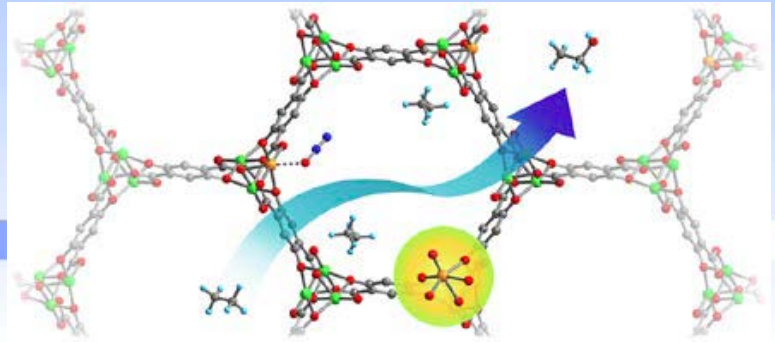
Future of Materials

ASM International Santa Clara Valley Chapter 2016-17:

- Al-Bronze in saltwater (Rita Kirchofer, Intertek)
- Political aspects of plutonium (Siegfried Hecker, fmr LANL)
- REEs, spent-U in Art
- Si nanotubes in Li-Ion batteries (Bill Nix, Stanford)
- Metal-organic frameworks for H-storage, e-devices (Sandia)
- Reliability of sputter targets in PV (Mia-Sole)
- F-A in chem/mftg plants
- F-A in aero-composites (Cecilia Larrosa Wilson, SIA)

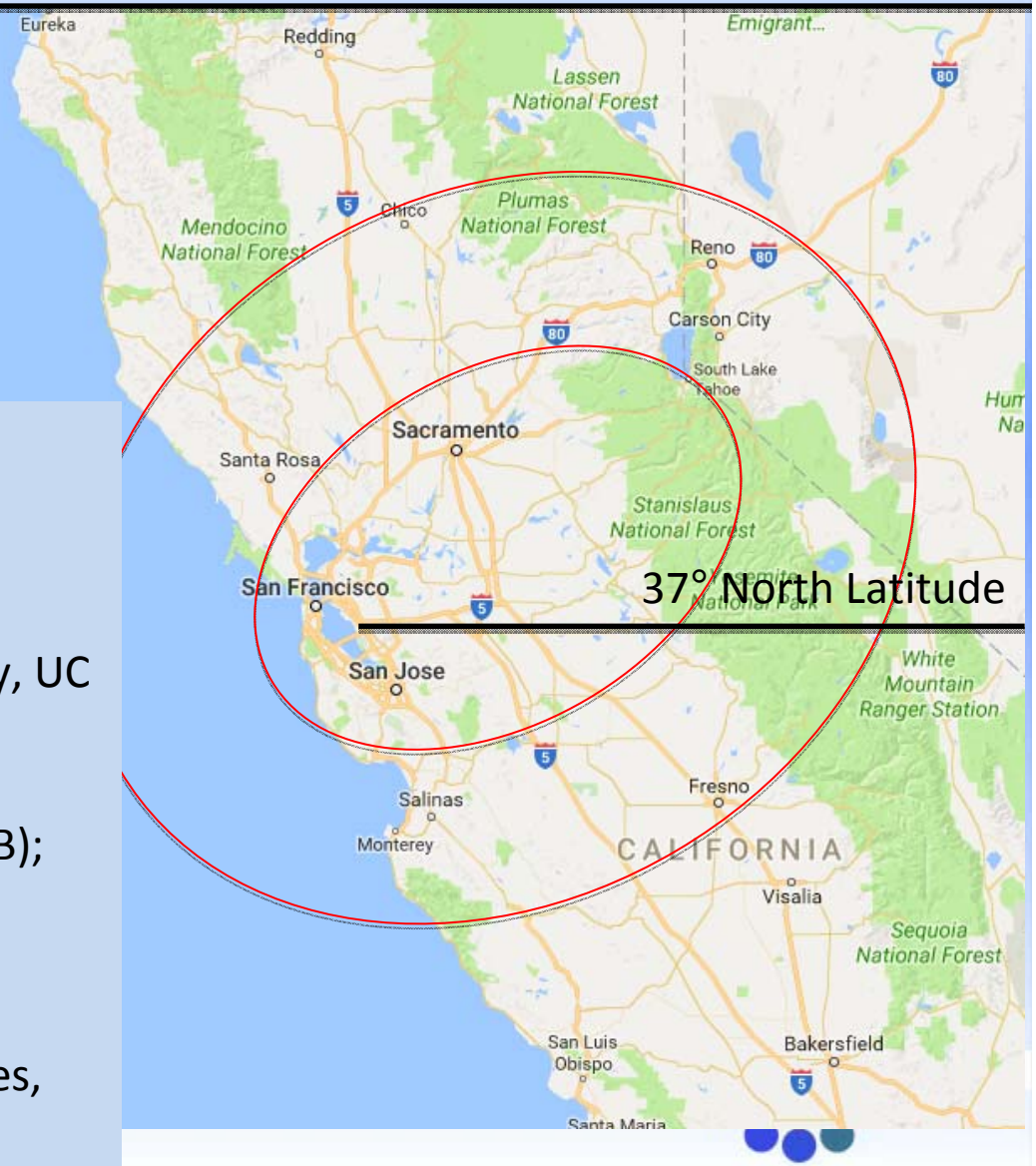
Student projects 2016-2017:

- Meyal 3-D Printing
- Voxel AM with Polymers
- Wire-bonding on flexible substrates
- Pressure-sensitive adhesives for medical smart patches
- Acoustic Metamaterials
- 3DP Air Processor for NASA
- Acoustic Hydrolens



Northern California-Azerbaijan Comparison

40° North Latitude; 12 hours time difference



Bay Area + "Wine Country," District 17, Sacramento Valley, "Gold Country"?
Population: 13 million (California 40 million)
Calif. GDP: $2.5T 2015 (=France)
Research Universities: Stanford, UC Berkeley, UC Davis, USF, SJSU, UC Santa Cruz
National Labs: LLNL, LBNL, SNL, NASA Ames
Venture Capital: $34 billion in 2015 (US $73B); $25 billion 2016 (US $58.6B)
Diversity: Lifestyle, Innovation, Ethnicity, Startups, Consumerism
Restraints: Traffic, Housing, Regulatory, Taxes, Visas, Working Hours


SAM
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ARAŞDIRMALAR
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Your Life in the Gig Economy


Azerbaijan Future Studies Society
Millennium Project
Global
Future
Researcher

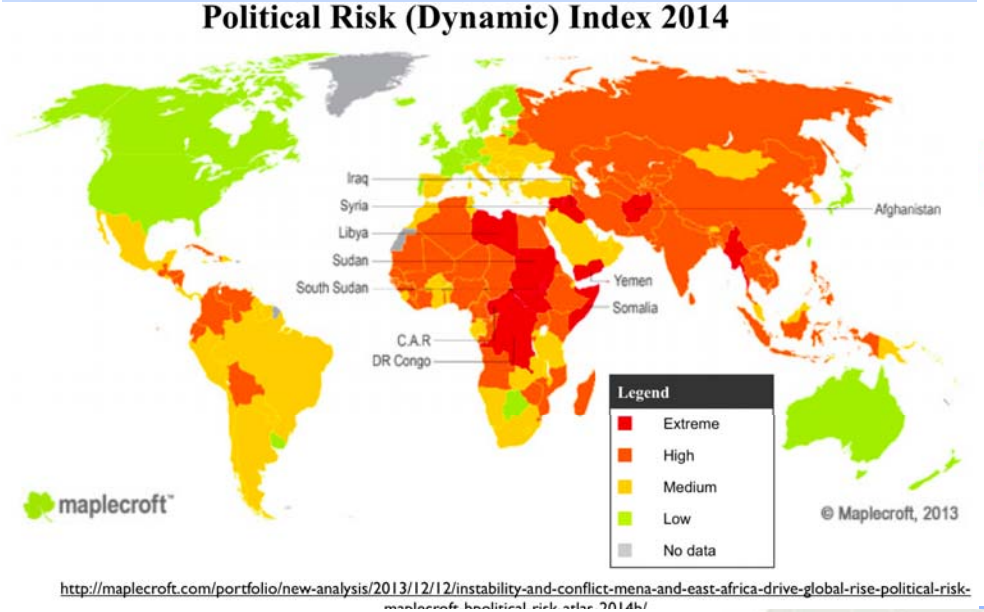
Future Day 2017

- Education needs/failures: Ethics and empathy; Critical thinking skills; Lifelong learning ("learning to learn"); Traditional education systems are behind in all of the above

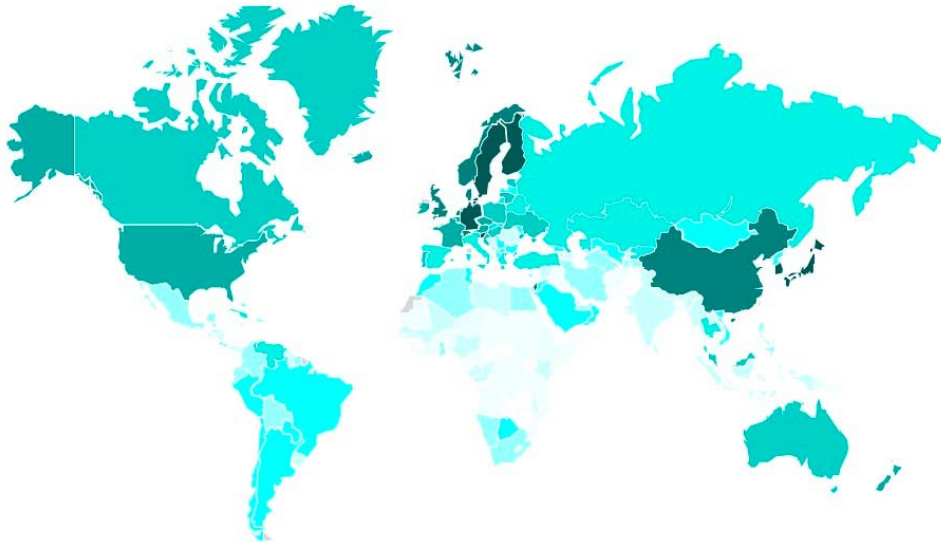
- "We can plan for only what we can visualize": Tech tools enabling entrepreneurs to self-educate and easily acquire back-office services online; "Crowd Lab" automated basic lab skills and interface techs enable non-experts to contribute in genetic research; Social enterprise decision making software enable groups to reach consensus.

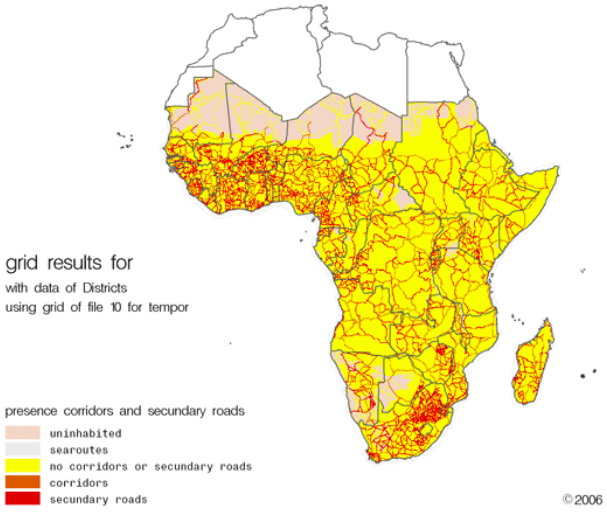
- Sustainable Nutritional Food for 10 Billion People: Food waste; resource inefficiencies; vertical farming; ocean farming; geo-engineering; etc.; Carbon Hangout

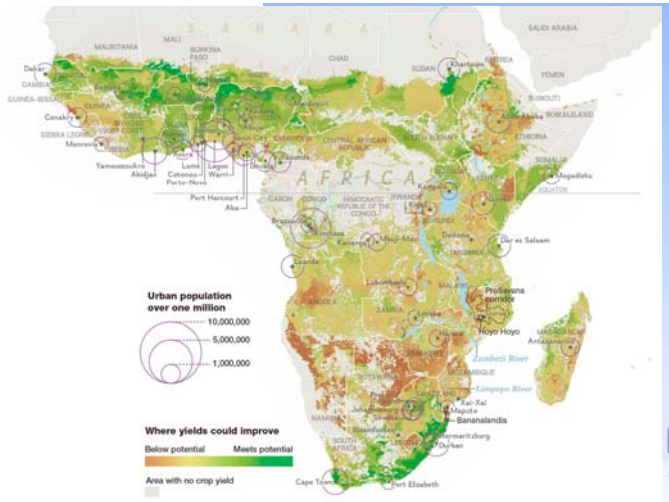
Visualizing Sustainability Workshop



http://maplecroft.com/portfolio/new-analysis/2013/12/12/instability-and-conflict-mena-and-east-africa-drive-global-rise-political-risk-







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Workforce & Learning Pathways

- Need to figure out what is worth knowing and who is qualified to coach and teach it.
- Society needs to teach general skills (critical thinking, lifelong learning, ethics and empathy, individual interest/talent matching, management and leadership), because private industry will not pay for it, if there is no direct benefit.
- Private industry will be best at training in specific skills, on the latest technology, at the places where the technology is being developed or where it is in use.
- There needs to be open discussion and transparent ratings systems for public and private sector learning providers.

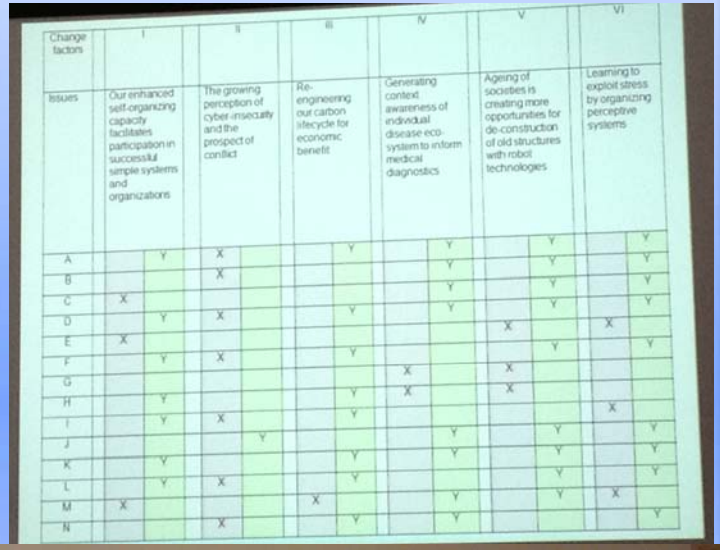
3D Printing in Haiti

- Original idea for 3D printing in refugee camps via J.Glenn/MP
- Suggestion picked up by Sticking Up For Children (New Orleans)
- Sponsored Foyer Espoir Pour les Enfants (FEPE; Port-au-Prince)
- 3 3DPrinters delivered May/June 2016
- Art project Oct-Dec 2017 to print musical instruments
- Instructors trained up on making prosthetic hands and limbs

Jonathand Saintine, Principal of the EFE school,with five students from the 3D-Printing Workshop

BFN Internal Survey on AI

- Impact on Education
- Impact on the Definition of Money
- Impact on Democracy
- Impact on Religion
- Impact on Gender Issues



Change factors	I	II	III	IV	V	VI
Issues	Our enhanced self-organizing capacity facilitates participation in successful simple systems and organizations	The growing perception of cyber-insecurity and the prospect of conflict	Re-engineering our carbon lifecycle for economic benefit	Generating context awareness of individual disease eco-system to inform medical diagnostics	Ageing of societies is creating more opportunities for de-construction of old structures with robot technologies	Learning to exploit stress by organizing perceptive systems
A		Y	X		Y	Y	Y	Y
B			X		Y	Y	Y	Y
C	X				Y	Y	Y	Y
D		Y	X		Y		X	X
E	X						Y	Y
F		Y	X		Y	X	X	
G						X	X	
H		Y			Y			X
I		Y	X		Y			
J			Y			Y	Y	Y
K		Y			Y	Y	Y	Y
L		Y	X		Y		Y	Y
M	X			X		Y	Y	X
N			X		Y	Y		Y

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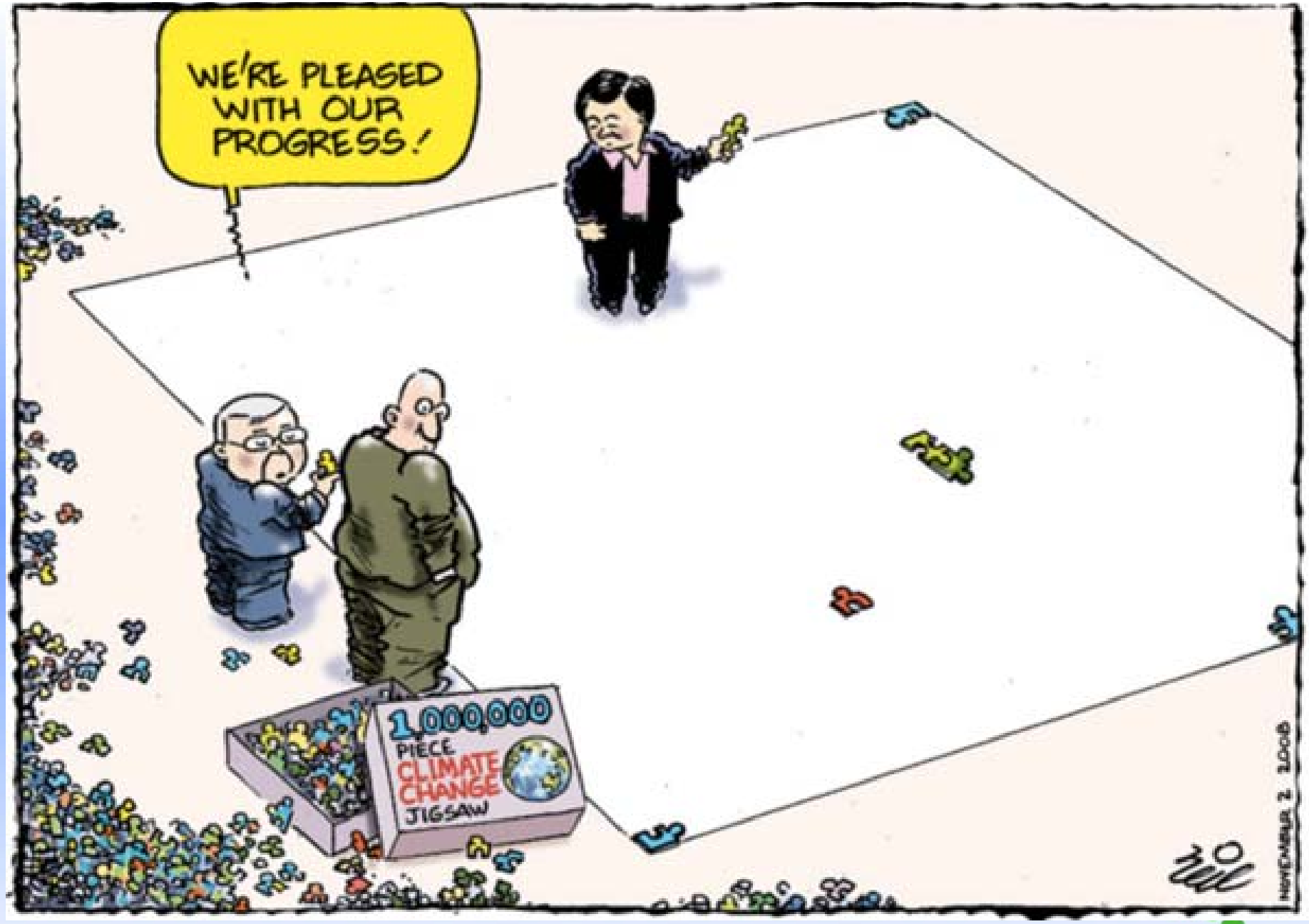
Brock's BFN Weak Signals 2017

- "Botty Training": Future life to be spent training personal robots, AIs, IoT devices to help us
- "Techno-Loneliness Condition": Tech isolates and disaffects people; increases depression, suicides, cults, terrorism
- "What We Do After Doing Nothing": Near-term inaction leads to sharp inflection points, overload, skill and tech shortages in critical areas in infrastructure, environment, construction
- "Turning Tools Into Toys" (after Ivan Illich): New tools (visualization, sonification, tactilization) to enable non-expertise to contribute innovation
- "The Measure of Man" (Need for new economic measures): Turning away from neo-liberal capitalism, OECD loss of leadership, possible self-imposed conservative social-capitalism (eg, China's social credit rating system), privacy/security dilemma; "fit" vs diversity



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