

Augmented/Amplified Humans Colloquium



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@ Harvard University, September 8, 2016

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Timing & Protocol

- 8:30 – 9:00: arrivals, breakfast, introductions
- 9:00 – 9:15: setting the stage – several types of Augmentation (Charles) and overall acceleration of technology.
- 9:15- 10:00: presentation on Evolving Ourselves (Steve Gullans) – **unnatural selection, non-random mutations**
- Break
- 10:15 – 12:15: Everyone - discussion on implications for Education, recommendations.
- Adjourn.

Protocol

Deep, candid, respectful debate

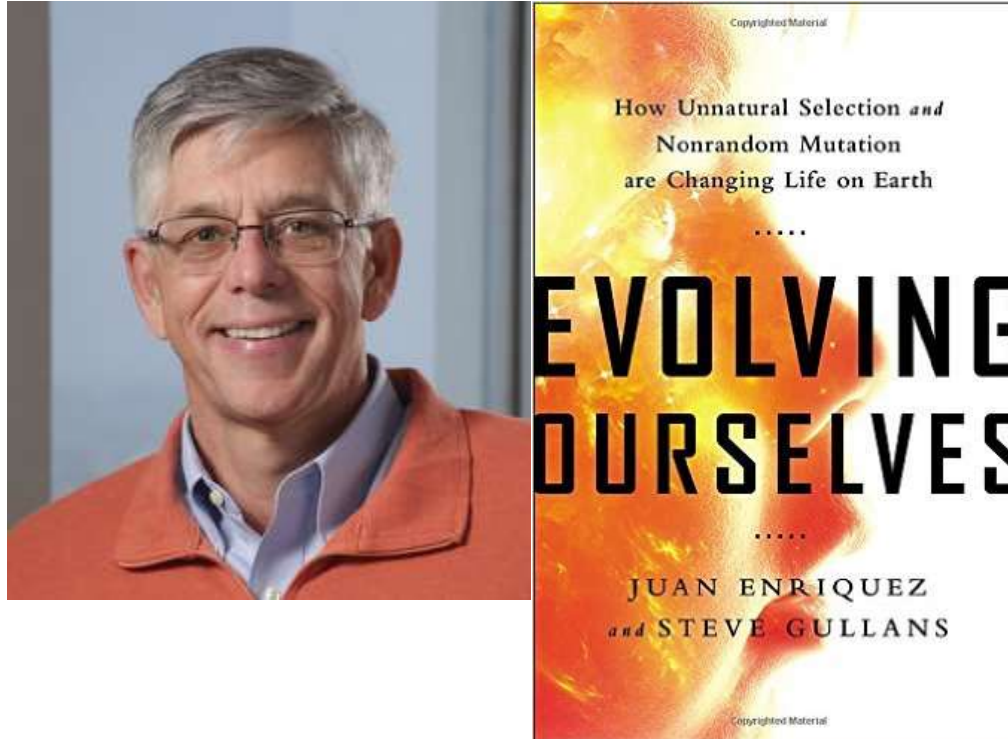
Conversation, not a prediction

Boundary condition: 5-15 years

Avoiding jargon and acronyms

Keeping in mind our personal biases (psychological and occupational)

Thank You!



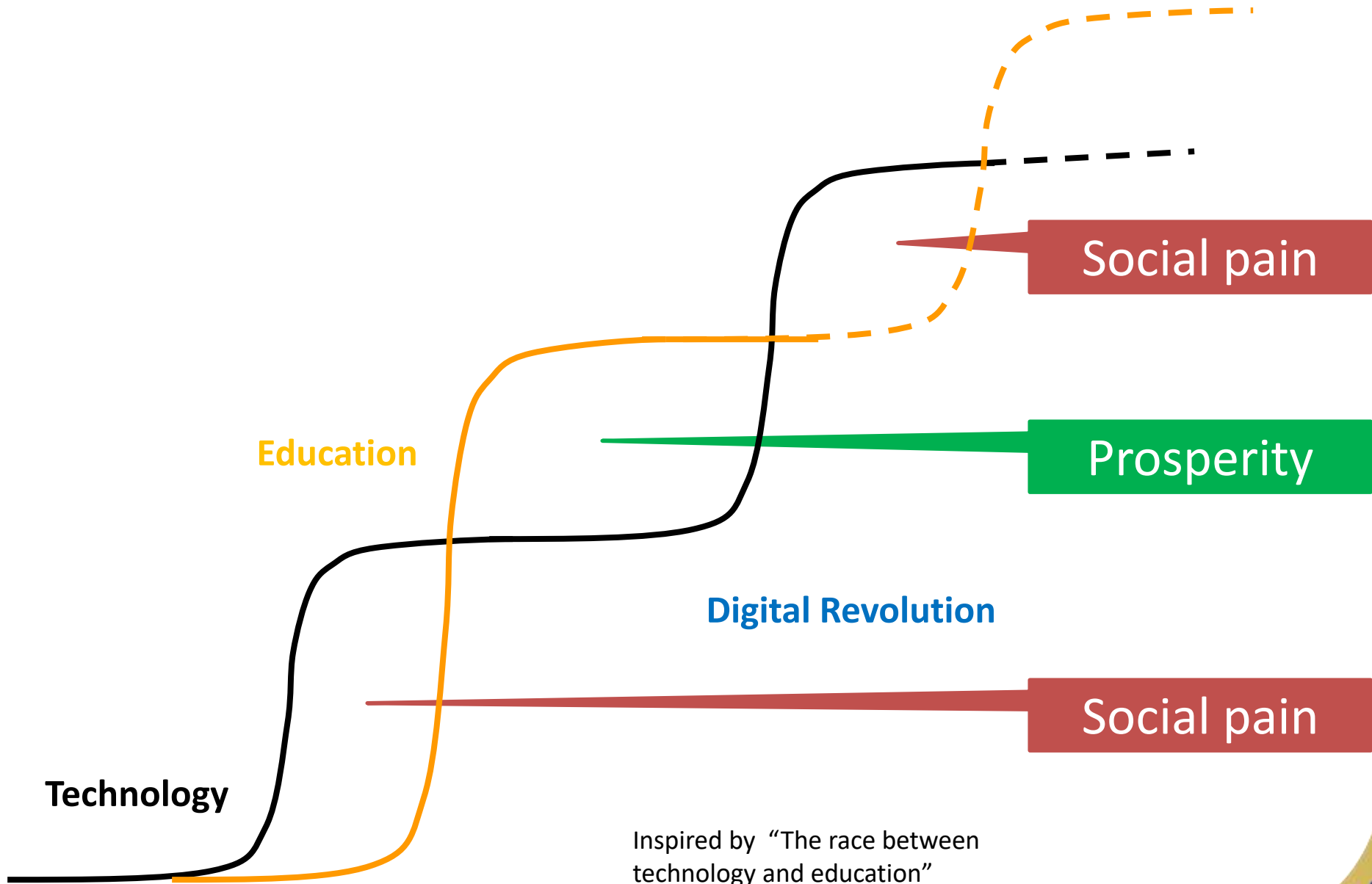
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Is this time different ?



The Race between Technology and Education



Education

Social pain

Prosperity

Digital Revolution

Social pain

Technology

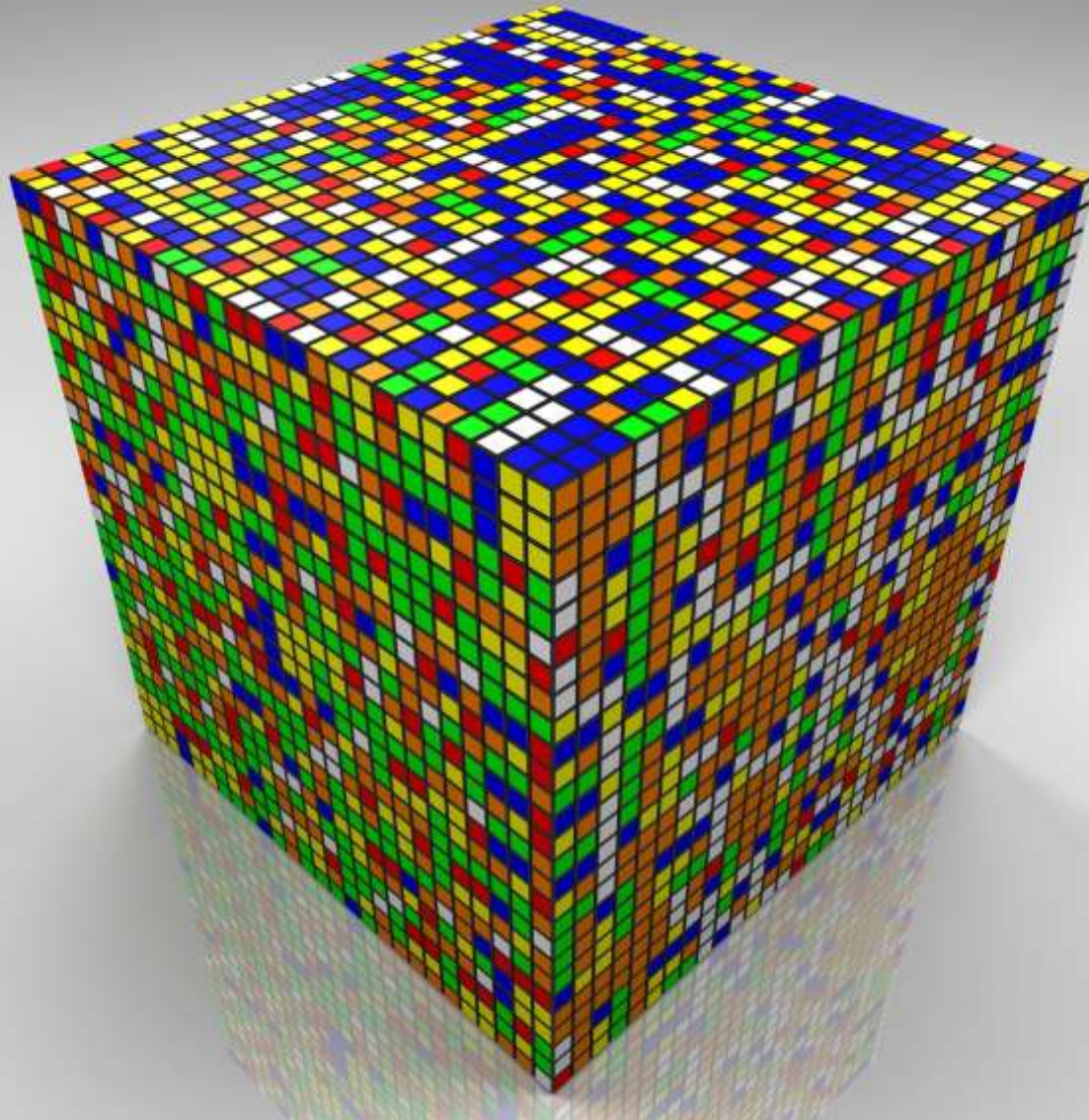
Industrial Revolution

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Inspired by "The race between technology and education"
Pr. Goldin & Katz (Harvard)

A combinatorial explosion of possibilities

→ *Accelerating change!*



Hype Cycle



Source: Gartner Group

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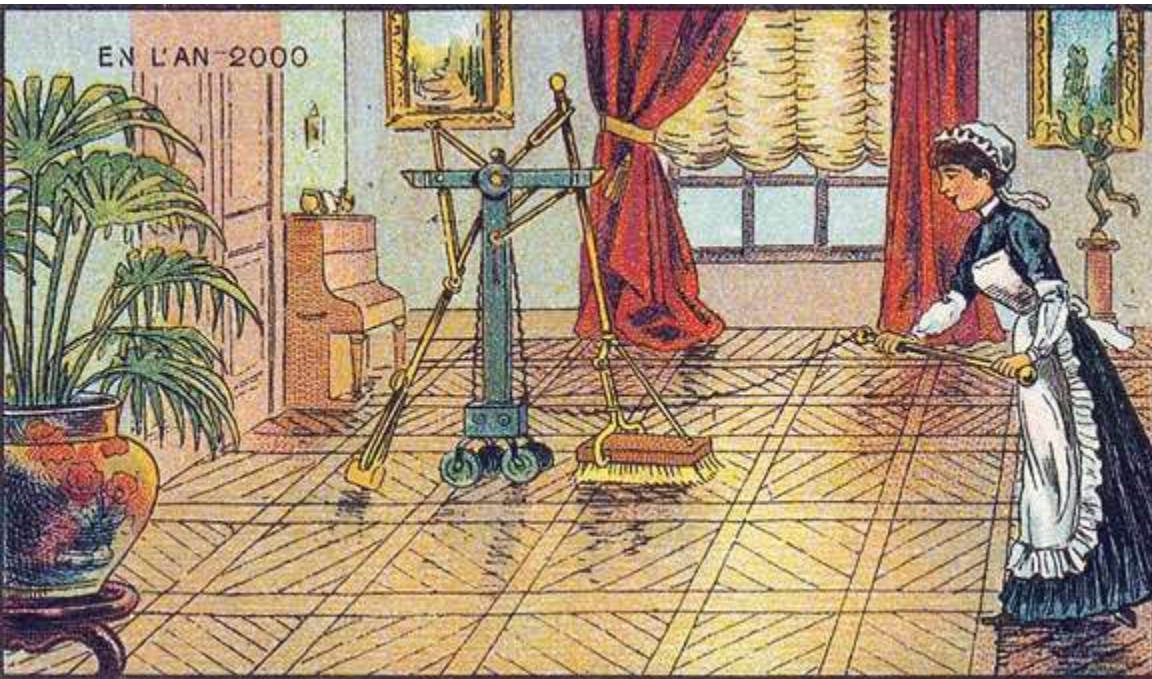
Reality Check

“We tend to overestimate the effect of technology in the short run...

...and underestimate the effect in the long run.”

Source: Roy Amara, Former President,
Institute for the Future

Our Limited Imagination



Source: Jean-Marc Côté, 1899



Several Types of Augmentation/Amplification

1. **Physical:** glasses → prosthetics → implants/transplants → exoskeletons → head transplant?
2. **Pharmacological:** caffeine → Adderall → neutraceuticals
3. **Networked:** Computer/social media → Robots, IoT, Headsets (AR, VR, EEG) → AI/Cognitive assistants, brain interfaces/implants
4. **Genetic:** Mating choices → vaccines → VIP → IVF → STEM cells → CRISPR

We have been making choices all along...

Unintentional vs Intentional?



The Beijing Genomics Institute's Cognitive Genomics Project is currently doing whole-genome sequencing of 1,000 very-high-IQ people around the world, hunting for sets of sets of IQ-predicting alleles... Kids produced by any one couple typically differ by 5 to 15 IQ points. So this method of "preimplantation embryo selection" might allow IQ within every Chinese family to increase by 5 to 15 IQ points per generation...

Geoffrey Miller, Evolutionary psychologist, NYU in EDGE 2013

“...great responsibility follows inseparably
from great power.” French National Convention of
1793

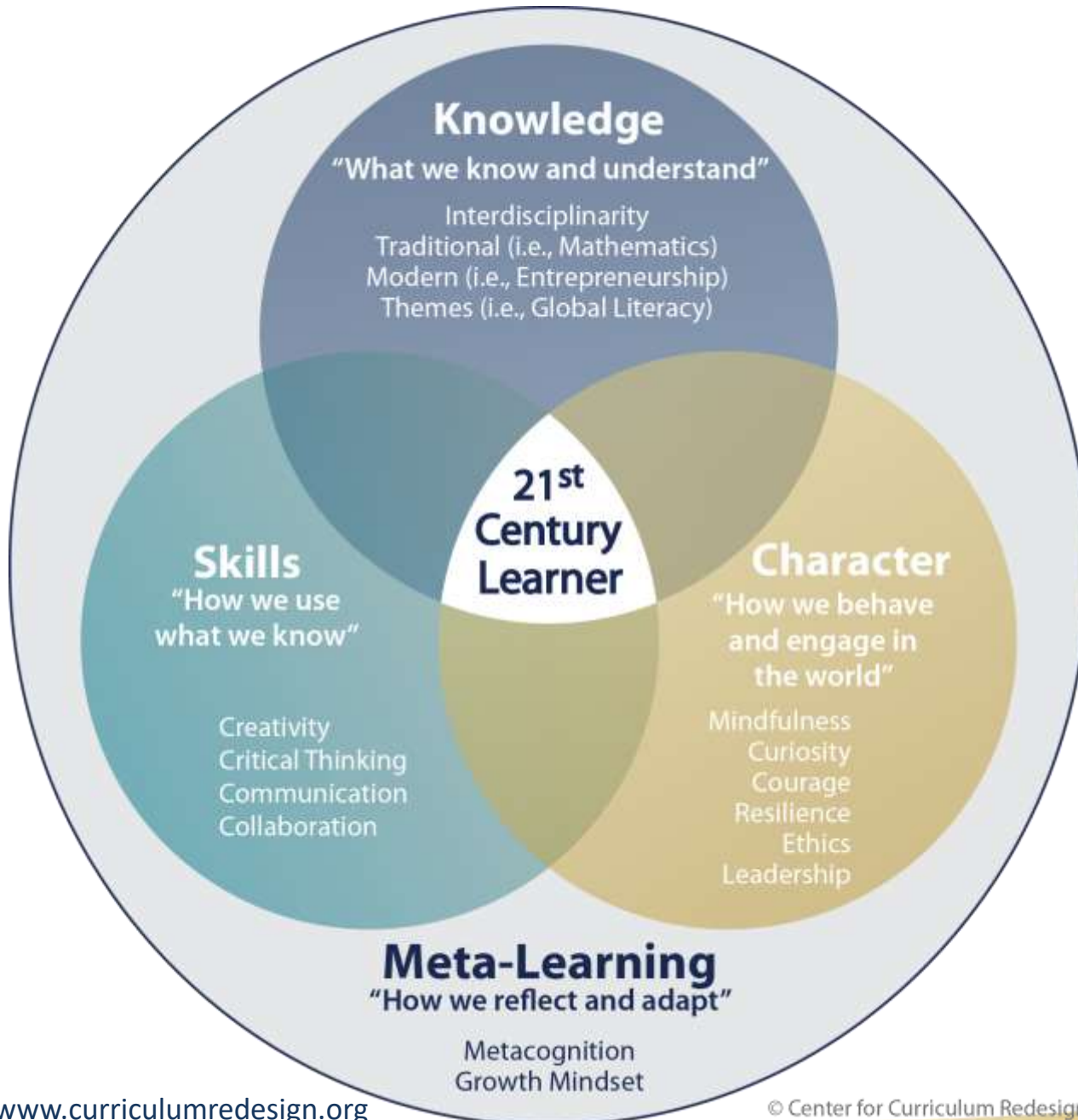




“Event Horizon”:

- What if formal education cannot catch up ?
- Will we *need* Human Augmentation to catch up?

21st Century Education Framework



Thank you !

“*What* should students learn for the 21st century?”

