Augmented/Ampiflied Humans Colloquium

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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
- 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)
Is this time different?
The Race between Technology and Education

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

Knowledge
“What we know and understand”
- Interdisciplinarity
- Traditional (i.e., Mathematics)
- Modern (i.e., Entrepreneurship)
- Themes (i.e., Global Literacy)

Skills
“How we use what we know”
- Creativity
- Critical Thinking
- Communication
- Collaboration

Character
“How we behave and engage in the world”
- Mindfulness
- Curiosity
- Courage
- Resilience
- Ethics
- Leadership

Meta-Learning
“How we reflect and adapt”
- Metacognition
- Growth Mindset
Thank you!

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