



# Technology and Humanity: The Future

– and what will this mean for education?



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[@gleonhard](https://twitter.com/gleonhard)



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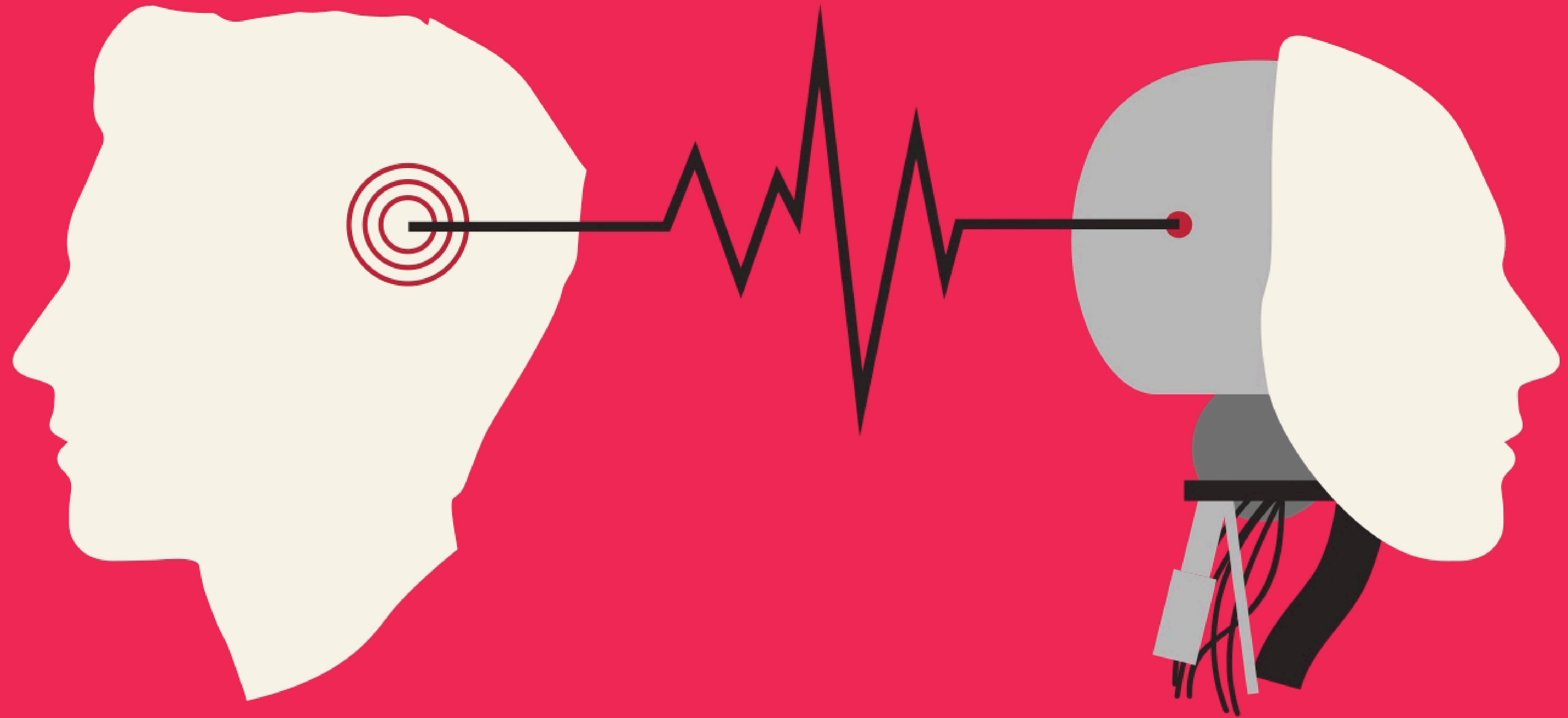
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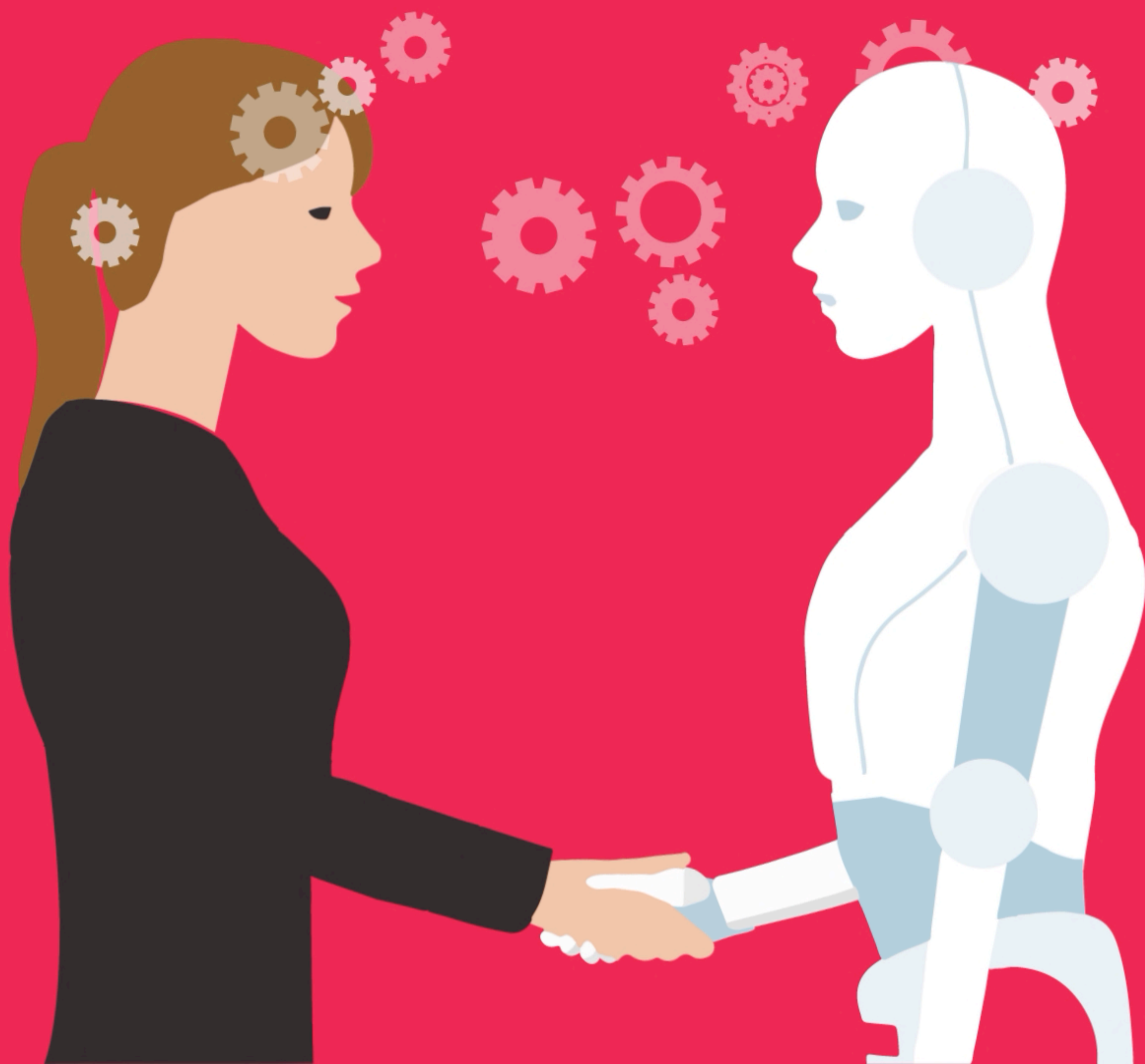


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# Humanity Technology





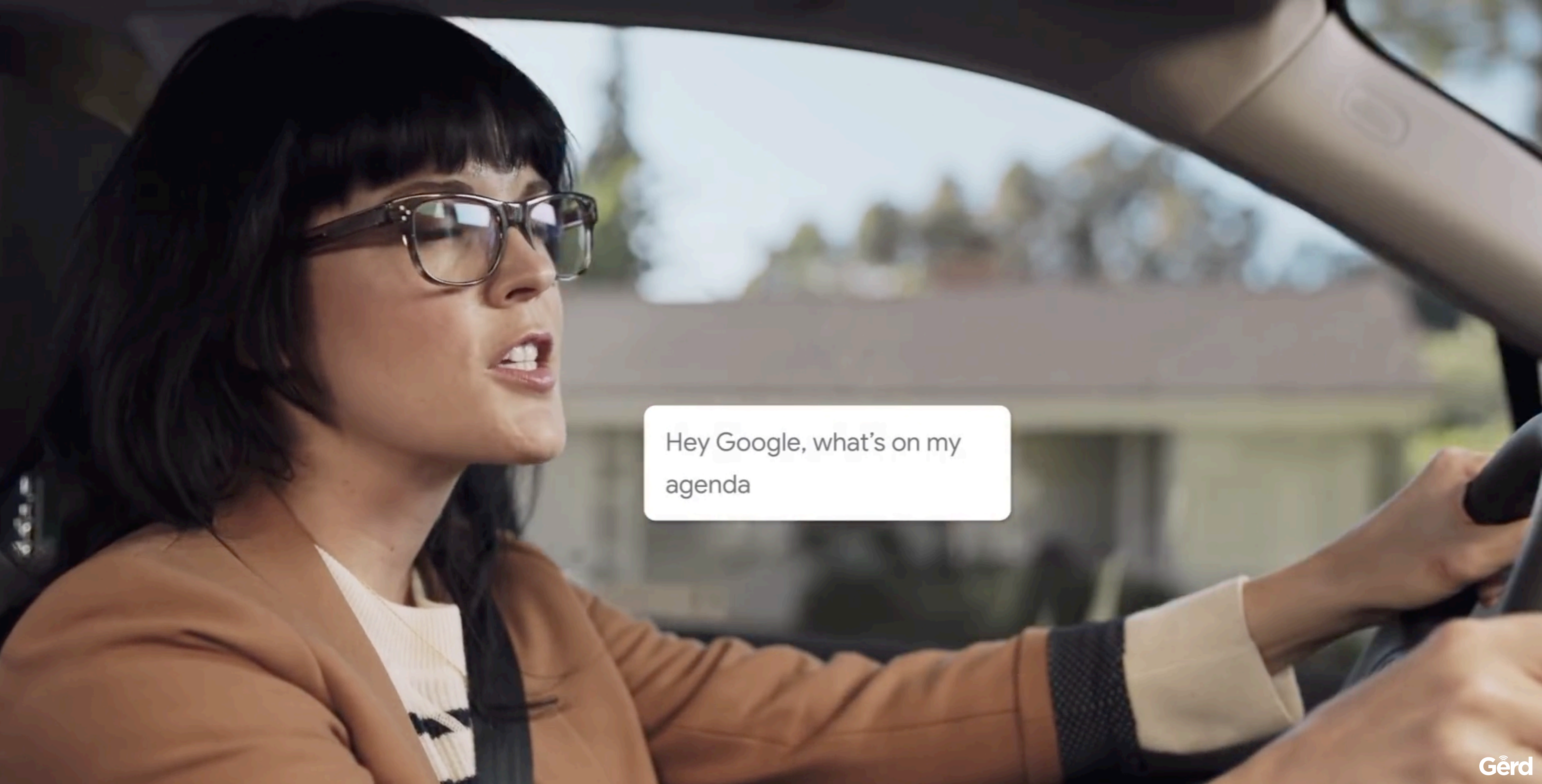


# Science fiction is increasingly becoming science fact: Humans ☯ Machines





# Science fiction is increasingly becoming science fact: Humans Machines



Hey Google, what's on my agenda



# Science fiction is increasingly becoming science fact: Humans ☯ Machines



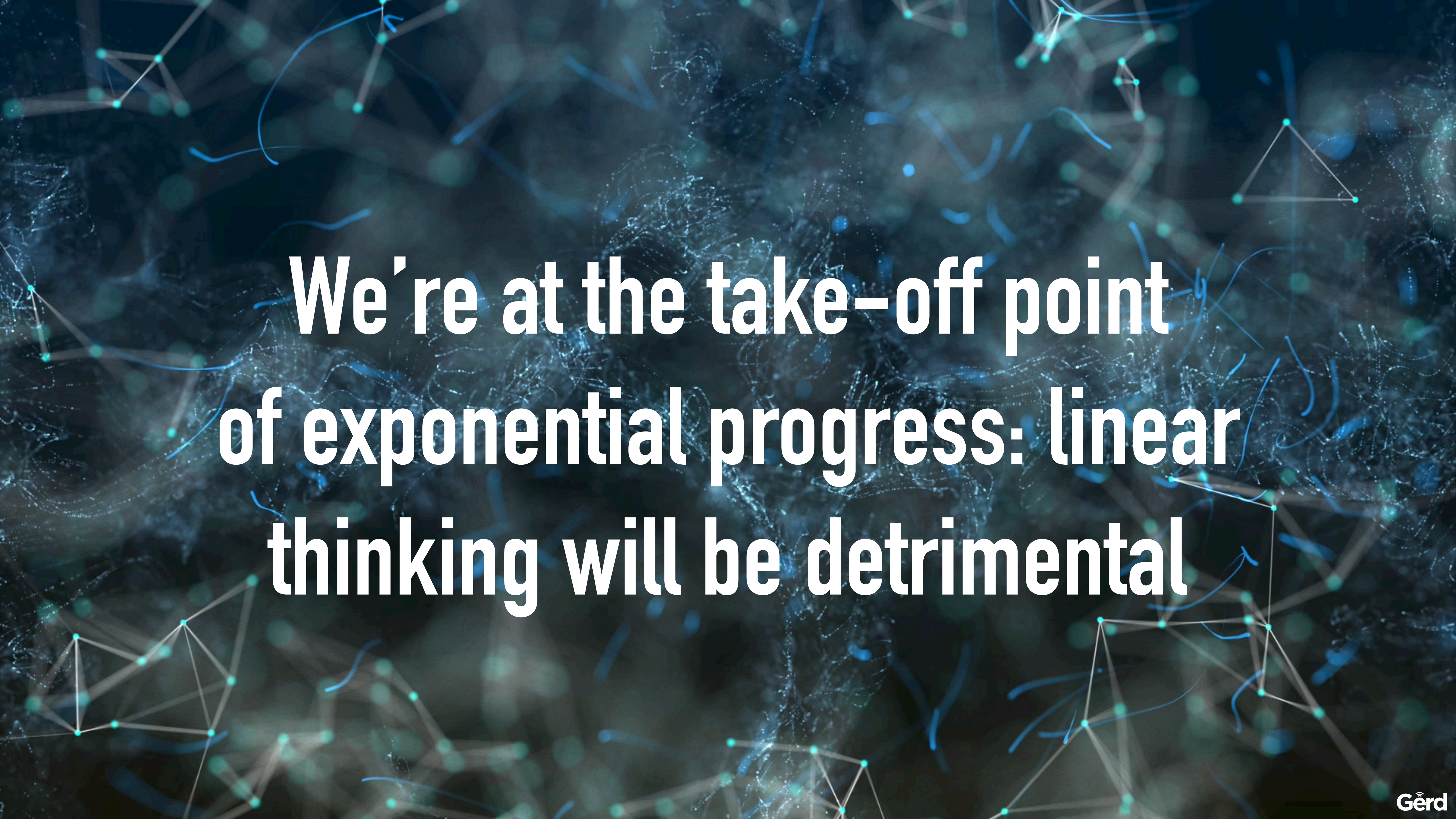
**WAYMO 01**



So, tell me more  
about your fear  
of AI....







**We're at the take-off point  
of exponential progress: linear  
thinking will be detrimental**



Gradually,  
then  
suddenly!





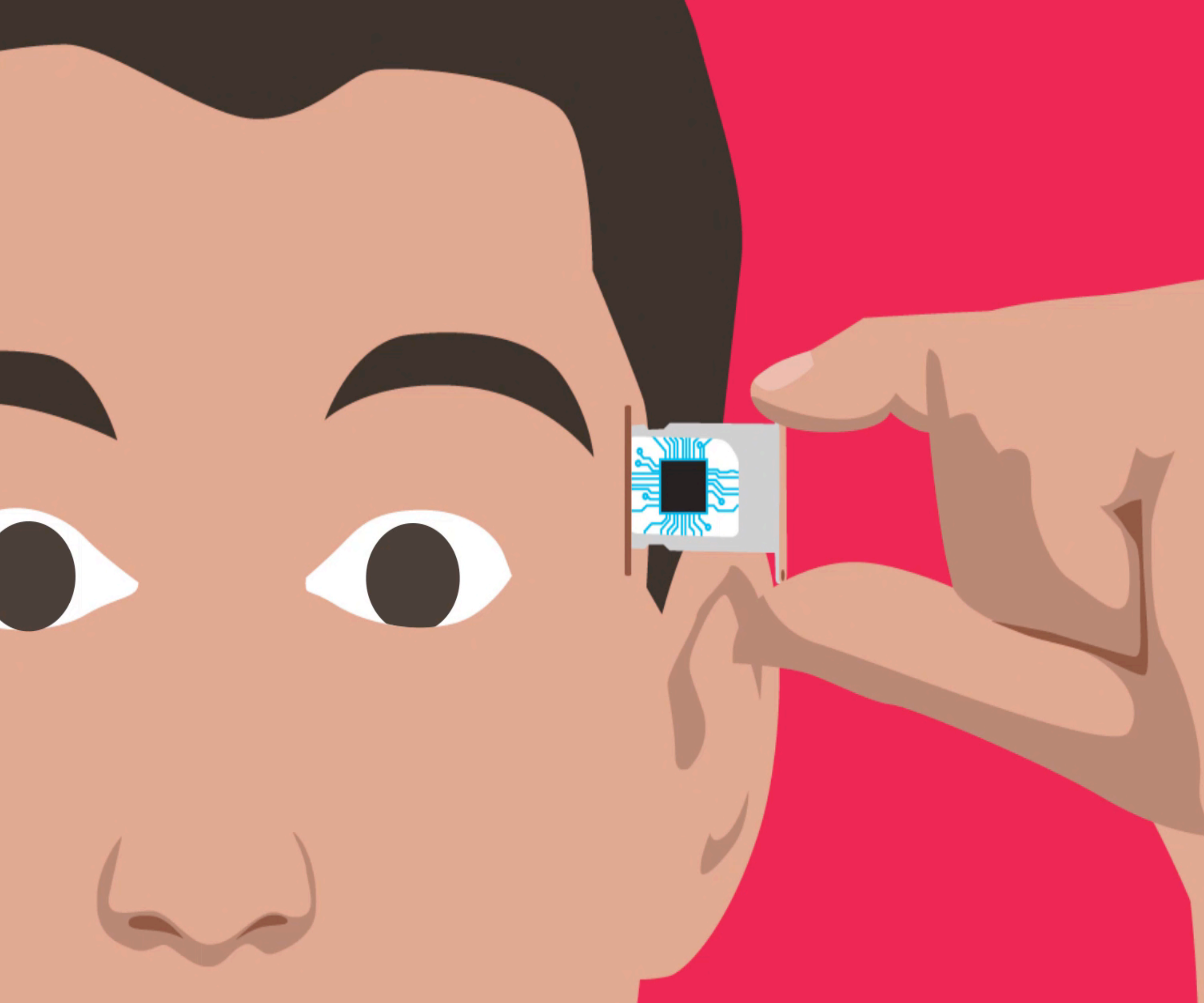




**Humanity will change  
more in the next 20  
years than in the  
previous 300 years**





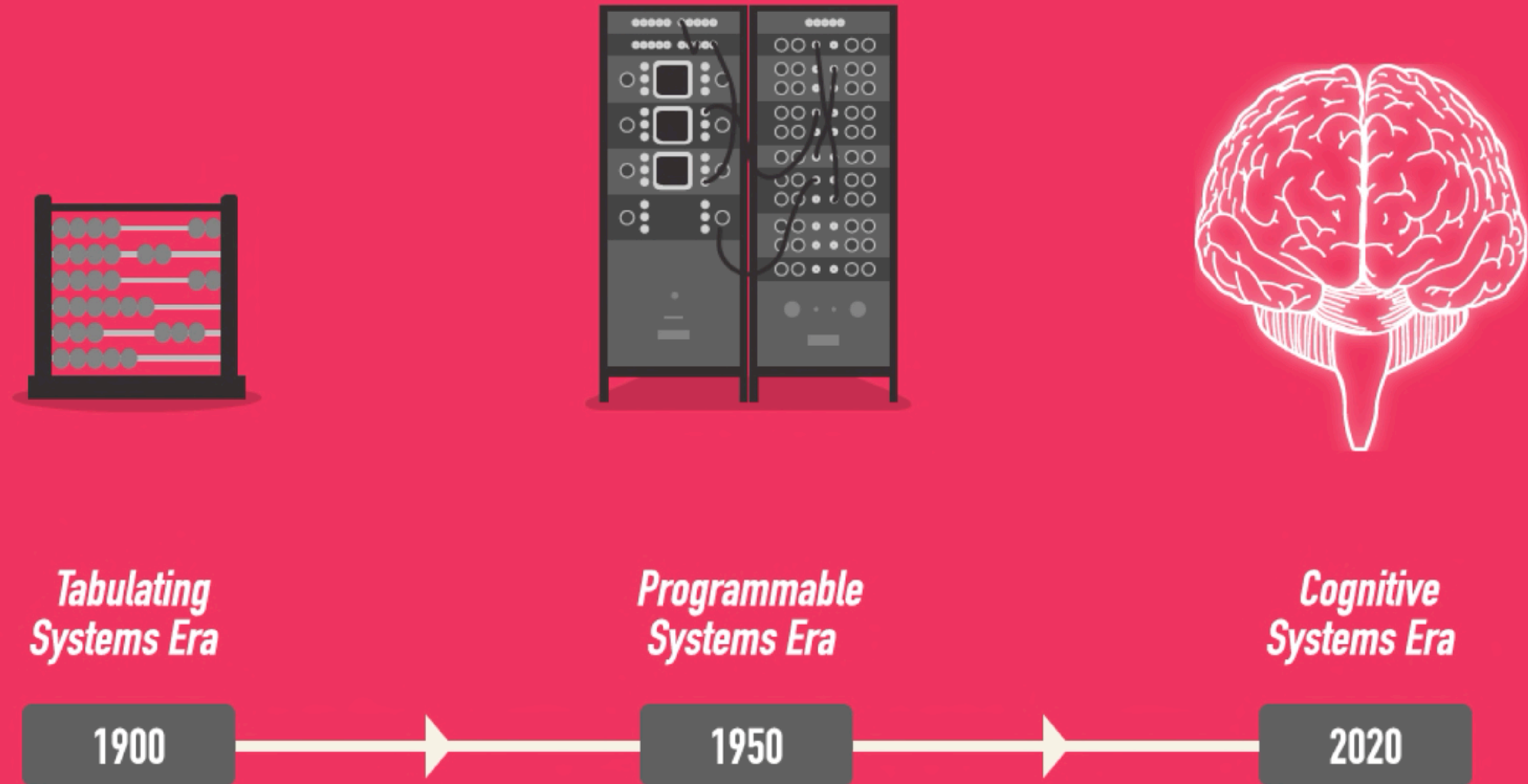


Teaching our kids to  
merely 'download'  
information, to fill  
up their 'hard-  
drives' for later  
retrieval, and to  
reproduce 'best  
practices' will be  
**detrimental**

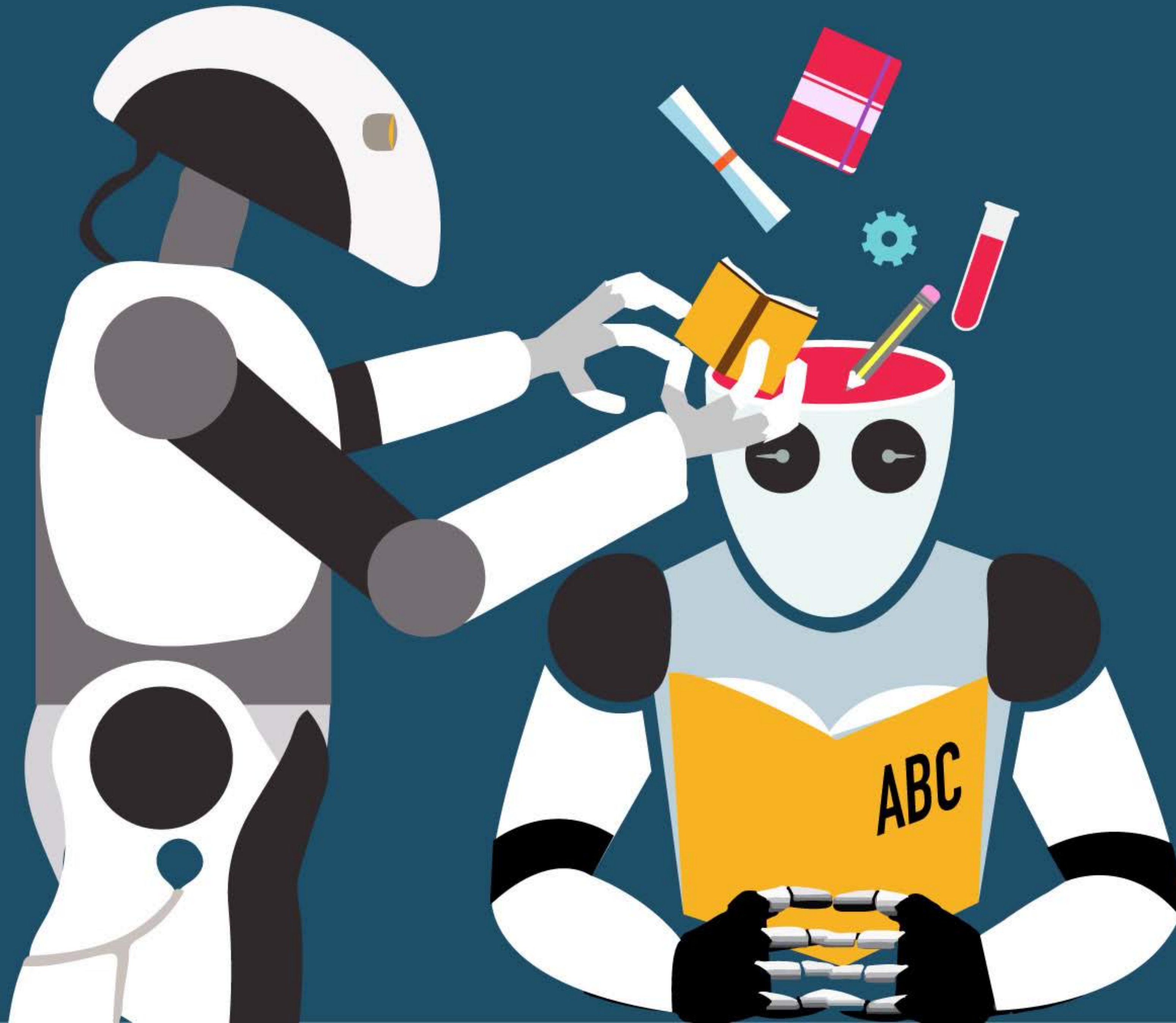


# AI: Computer systems that turn information and data into KNOWLEDGE

(Demis Hassabis, CEO, DeepMind)









**“Machine learning is the science of giving computers the ability to learn and find insights without explicitly programming the machines on what to do”**





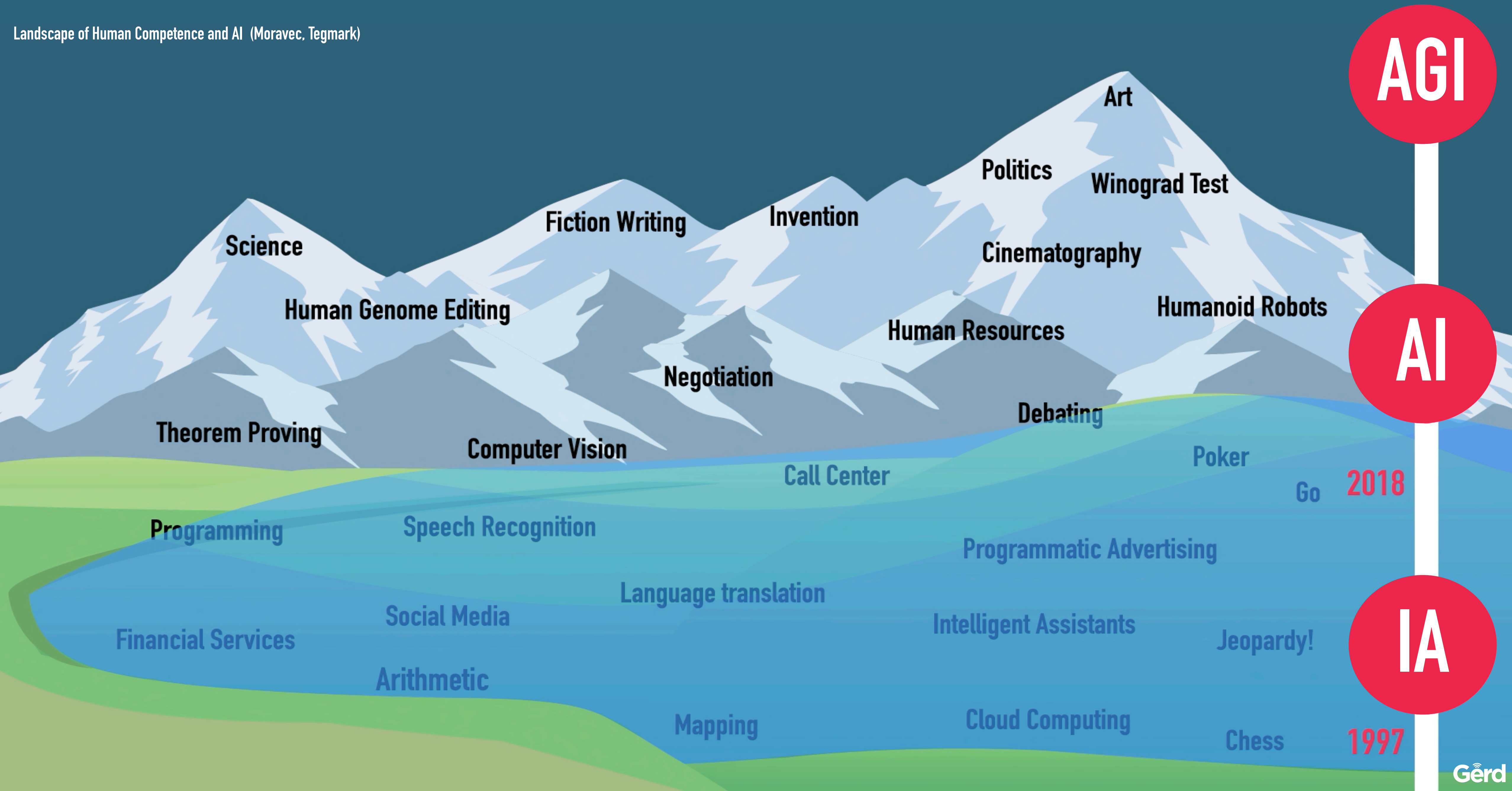
# Machines that are no longer programmed but TRAINED





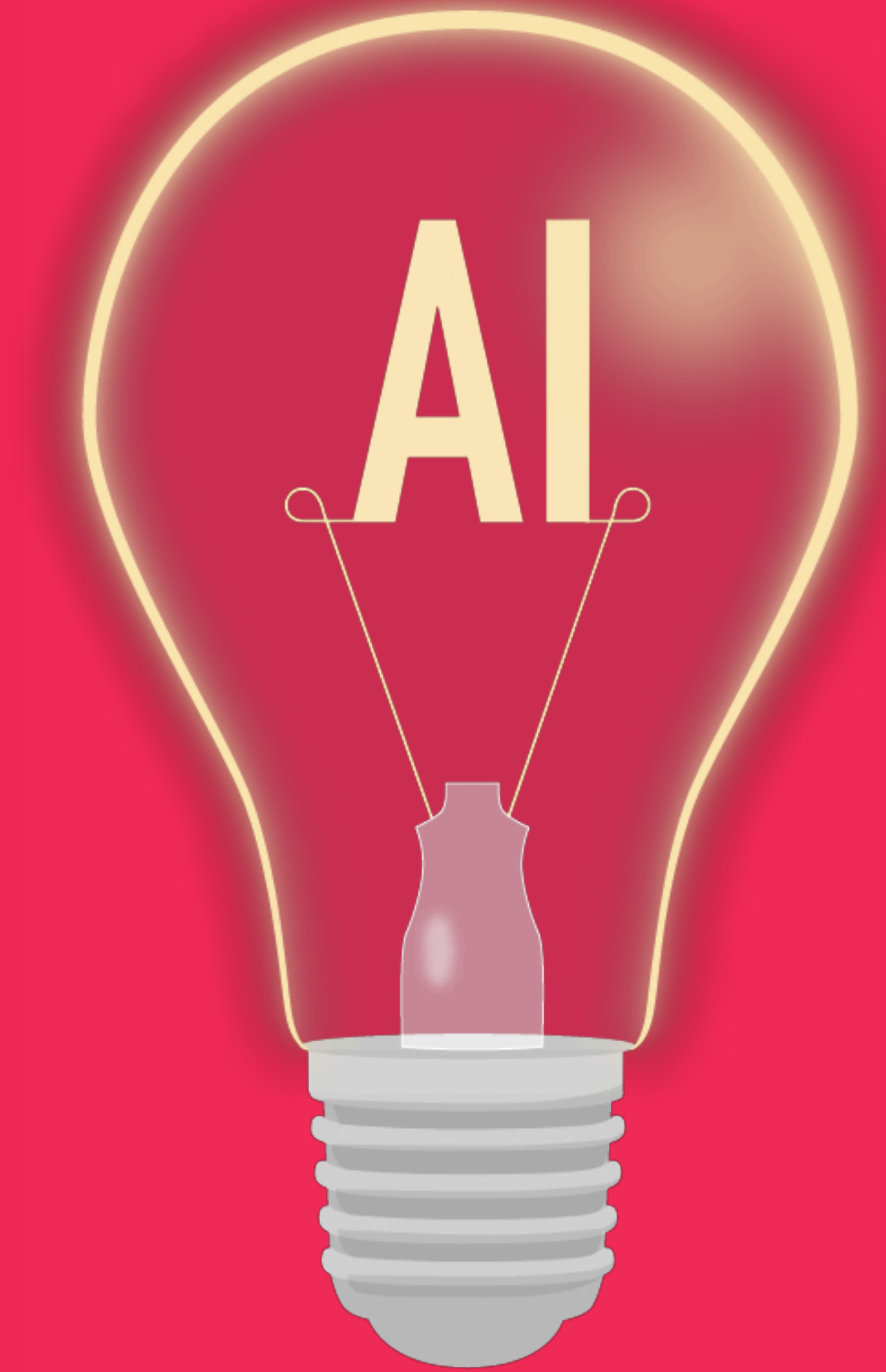
# The rise of smart machines: IA and narrow AI will be very disruptive, but AGI will create existential issues

Landscape of Human Competence and AI (Moravec, Tegmark)





# Data is the new oil, and AI is the new electricity

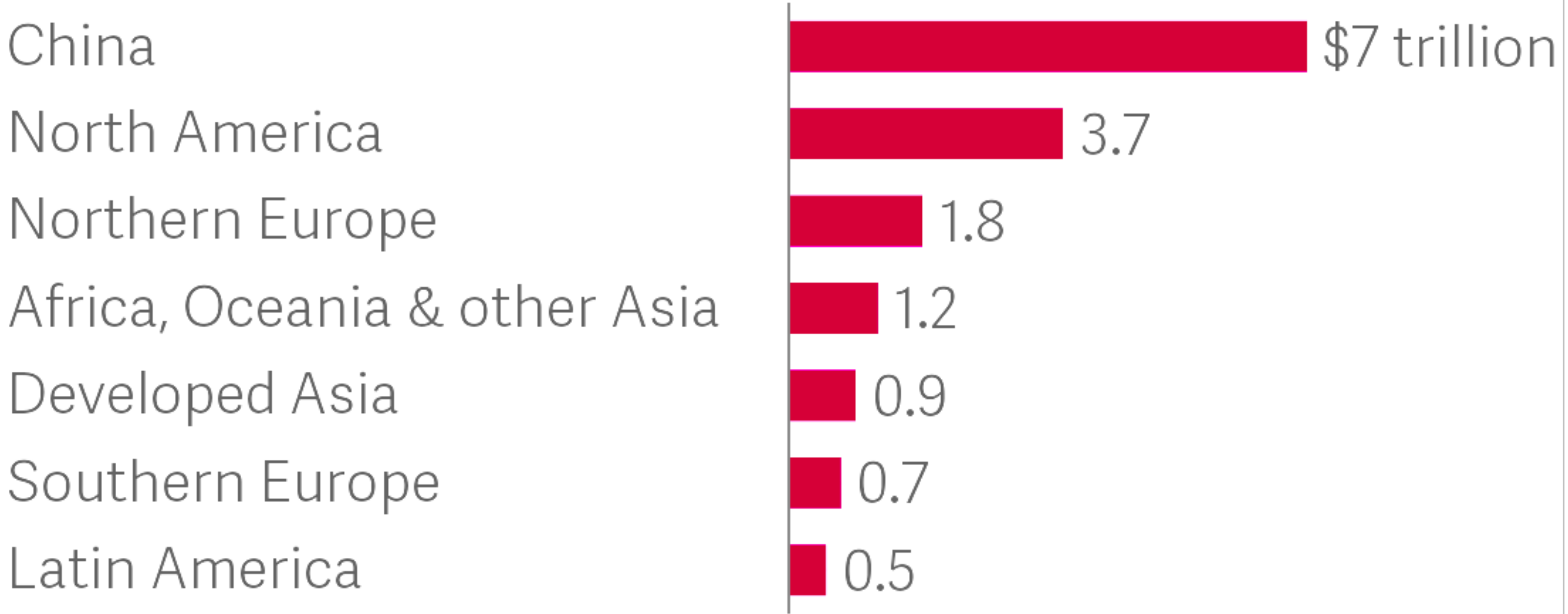




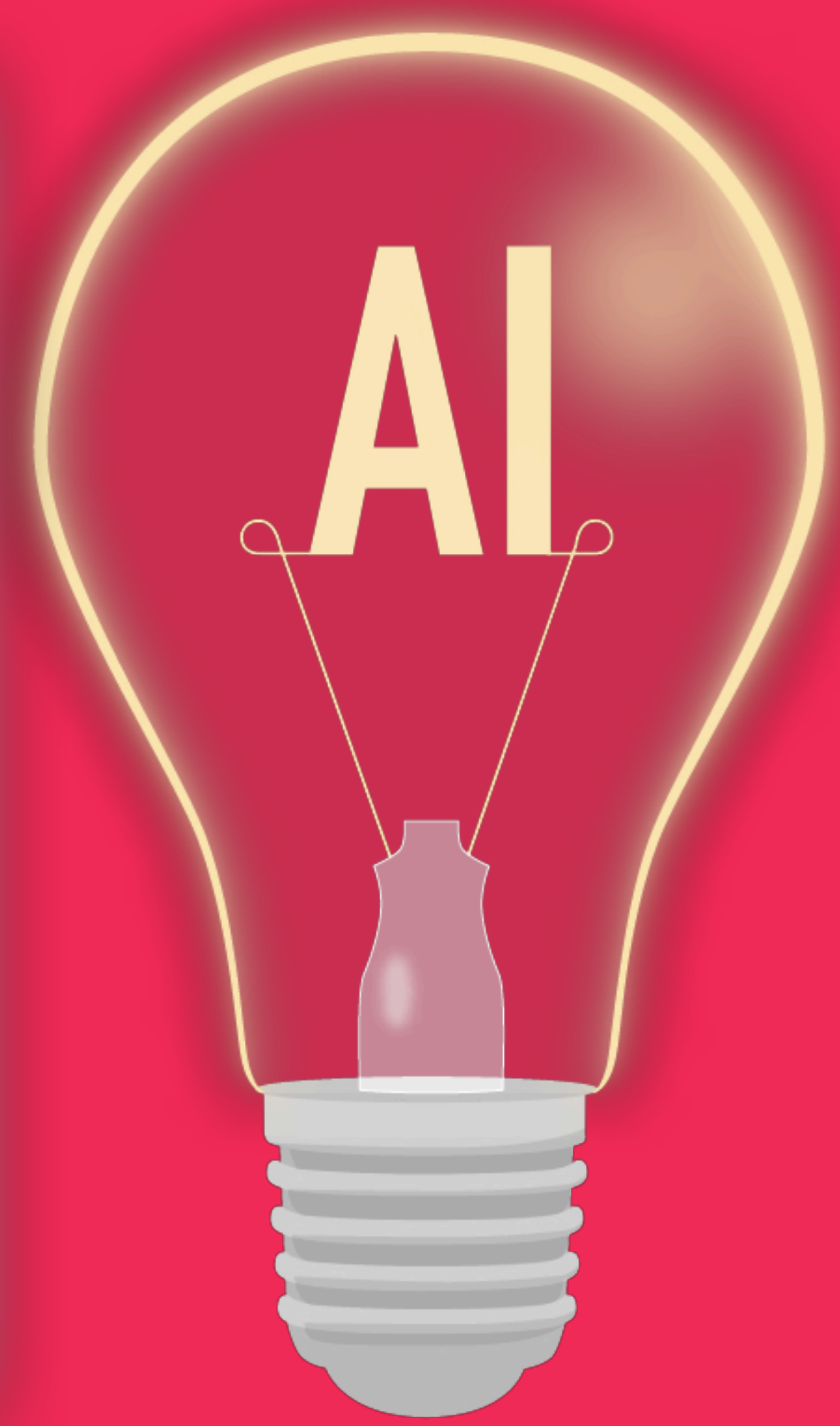
# Data is the new oil, and AI is the new electricity: a huge economic temptation

## Forecast GDP gains from AI, 2017-2030

Extra economic growth



△ T L △ S | Data: PwC





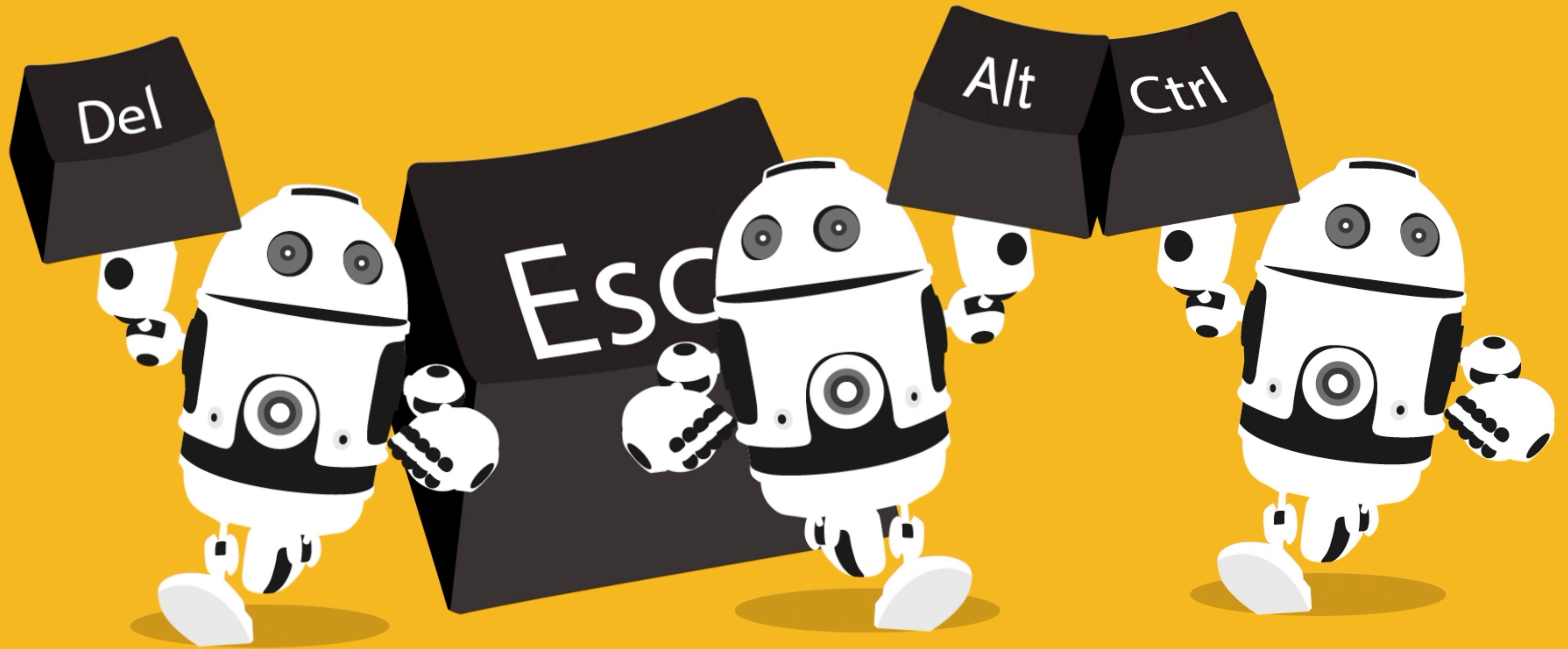
# Who governs the world? Who defines 'the future'?

Rank 2018	Company	Region	2013	2018
1)	Apple	USA	\$418	\$924
2)	Amazon	USA	121	783
3)	Microsoft	USA	291	753
4)	Google / Alphabet	USA	288	739
5)	Facebook	USA	56	538
6)	Alibaba	China	--	509
7)	Tencent	China	71	483
8)	Netflix	USA	13	152
9)	Ant Financial	China	--	150
10)	eBay + PayPal*	USA	71	133
11)	Booking Holdings	USA	41	100
12)	Salesforce.com	USA	25	94
13)	Baidu	China	34	84
14)	Xiaomi	China	--	75
15)	Uber	USA	--	72
16)	Didi Chuxing	China	--	56
17)	JD.com	China	--	52
18)	Airbnb	USA	--	31
19)	Meituan-Dianping	China	--	30
20)	Toutiao	China	--	30
		Total	\$1,429	\$5,788

KPCB



# Who will be 'mission control' for humanity?

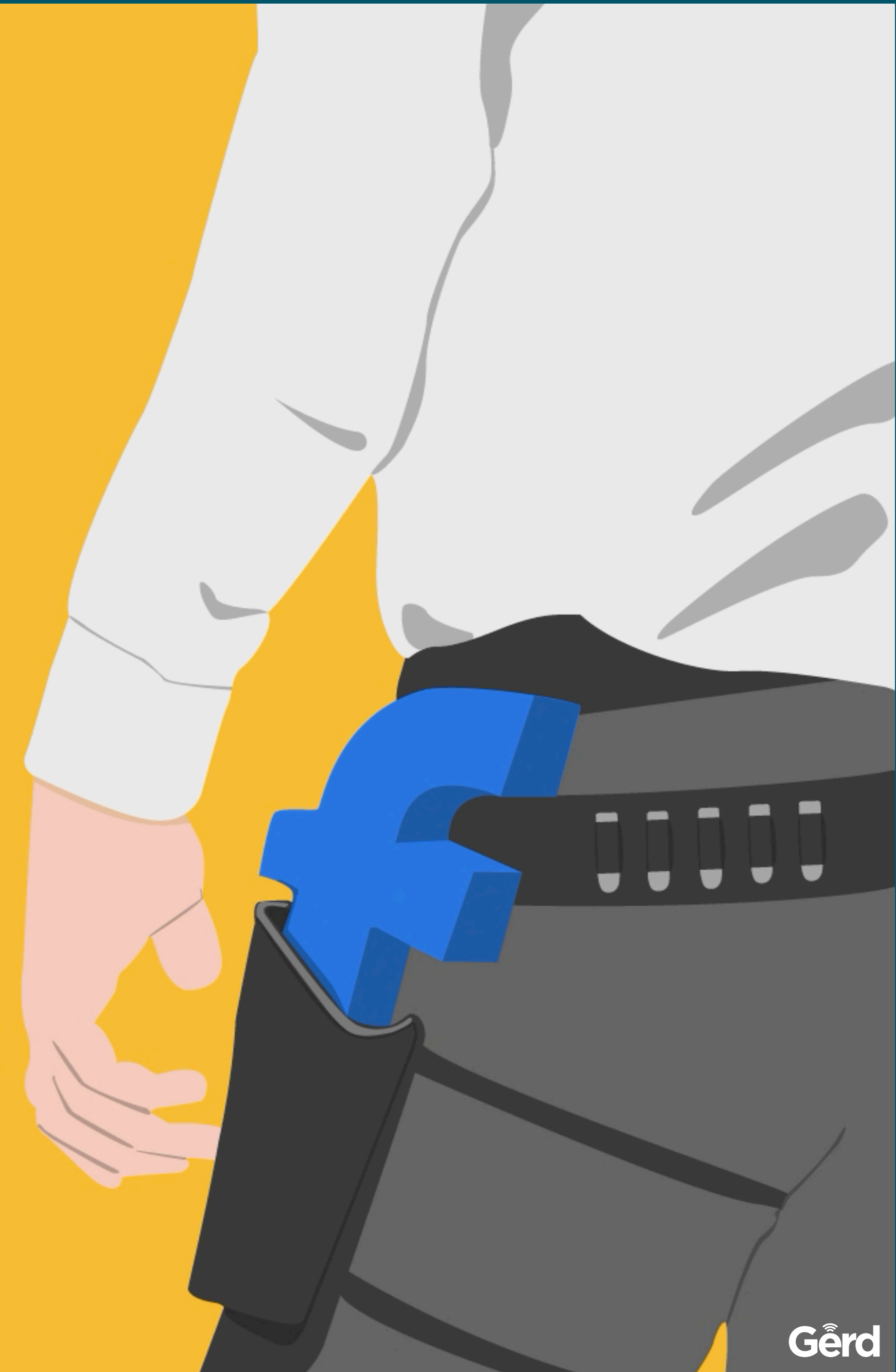




**Ethics is knowing the difference  
between what you have a right  
(or the power) to do and what is  
the right thing to do**



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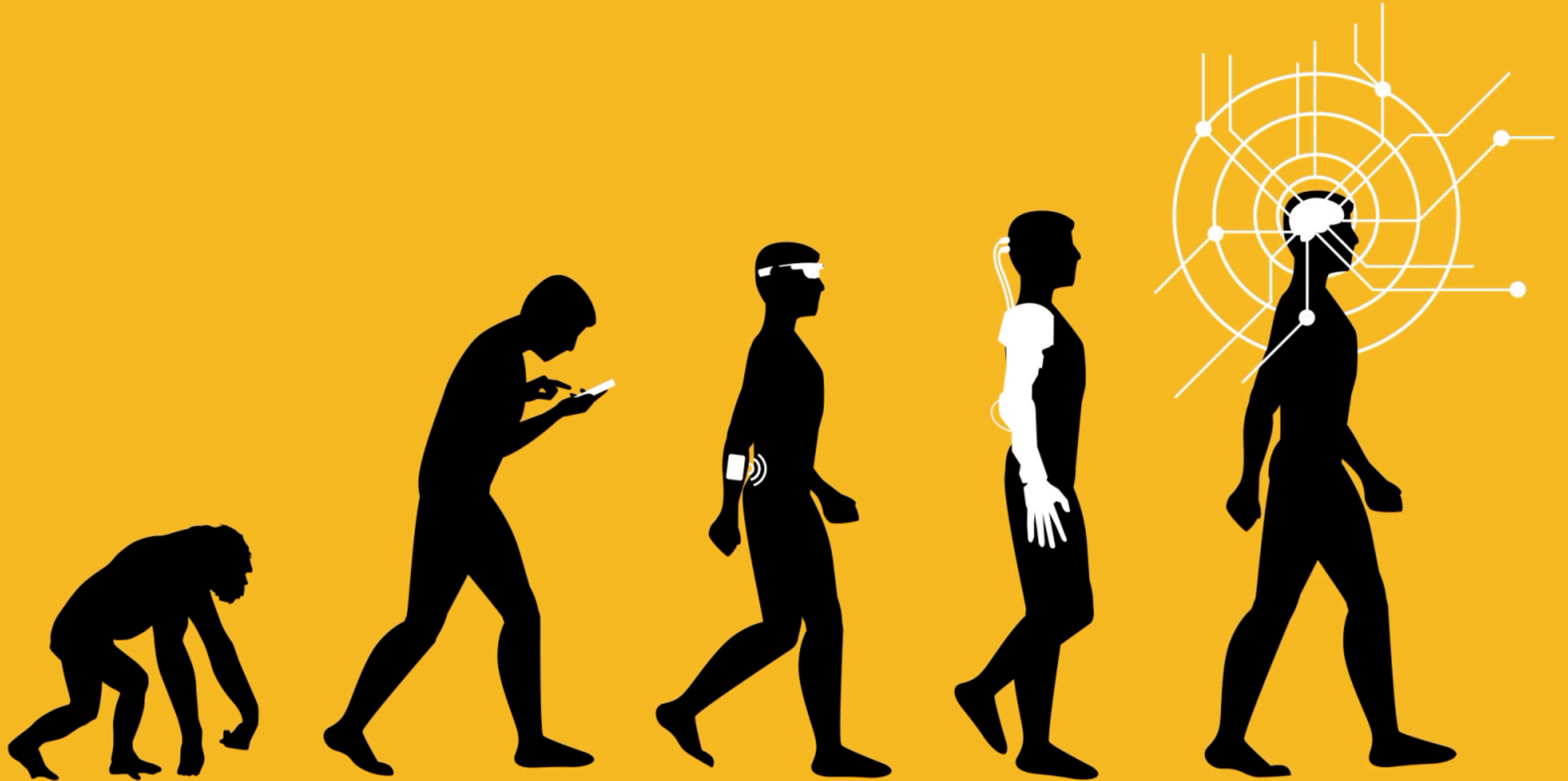




**TECHNOLOGY HAS NO ETHICS**



# What will it mean to BE HUMAN once technology affords us infinite possibilities?









**Would YOU use technology to become omniscient, omnipotent and omnipresent?**





... to finally 'transcend our human limitations' ...?





We need more why-sayers!

#digitaletics

WHY?



**Societies are driven by their technology but defined by their humanity**





# Technology is exponential but humans are not



Machine 'smartness' will  
become an abundant  
commodity –

# HUMANNESS

will be what differentiates us!



**The biggest danger is not that machines will take over but  
that we become too much like them!**



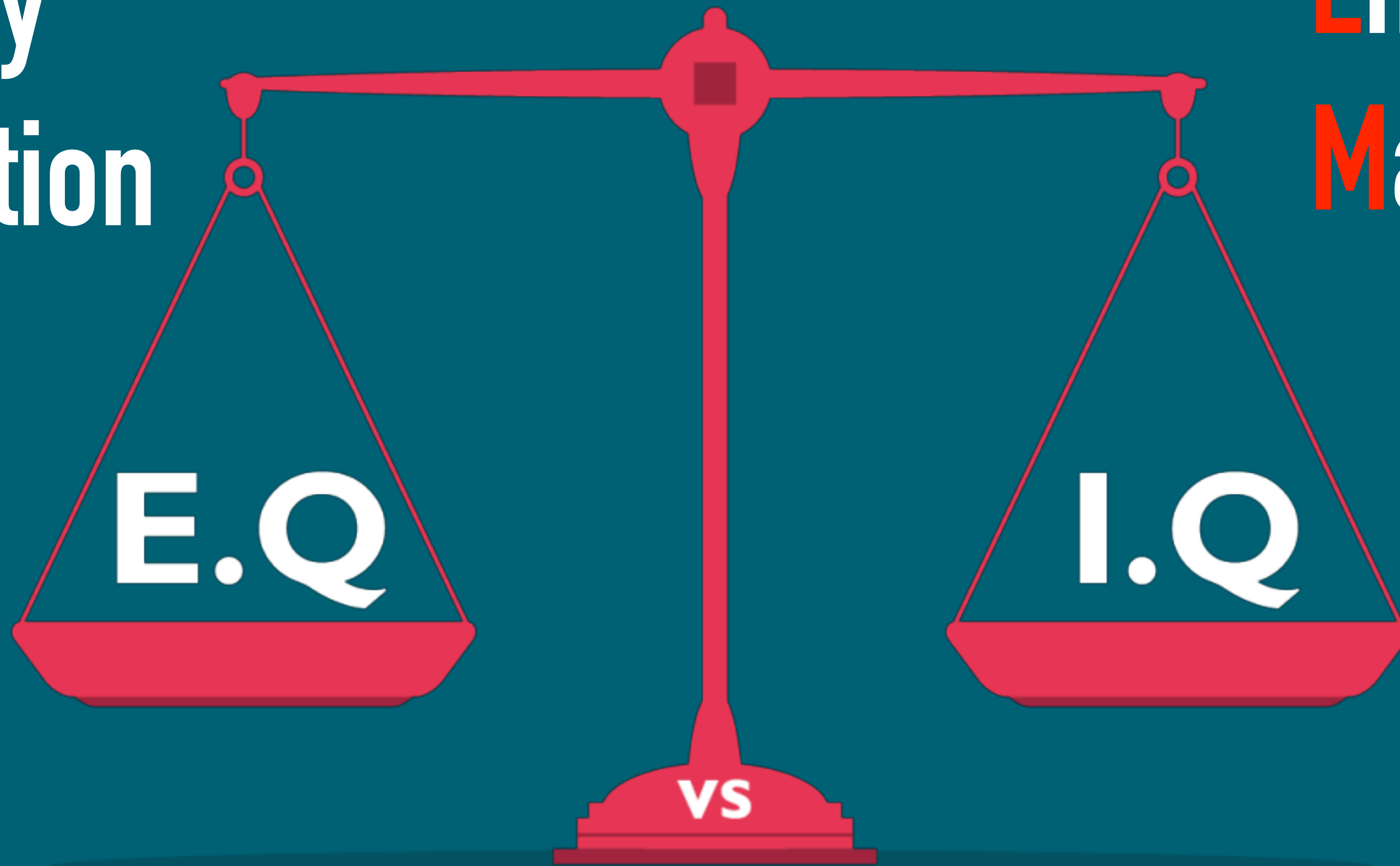


**H**umanity

**E**thics

**C**reativity

**I**magination



**S**cience

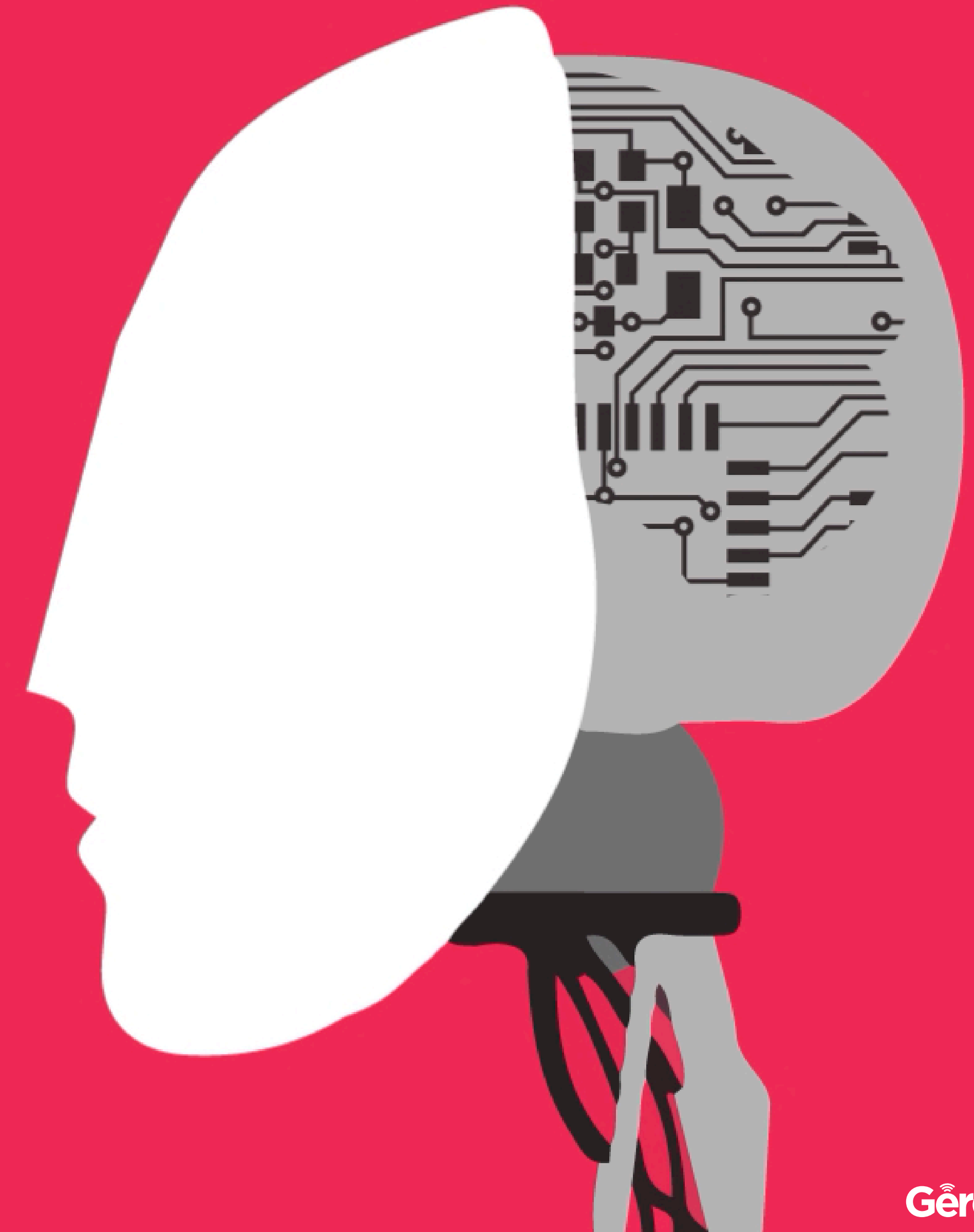
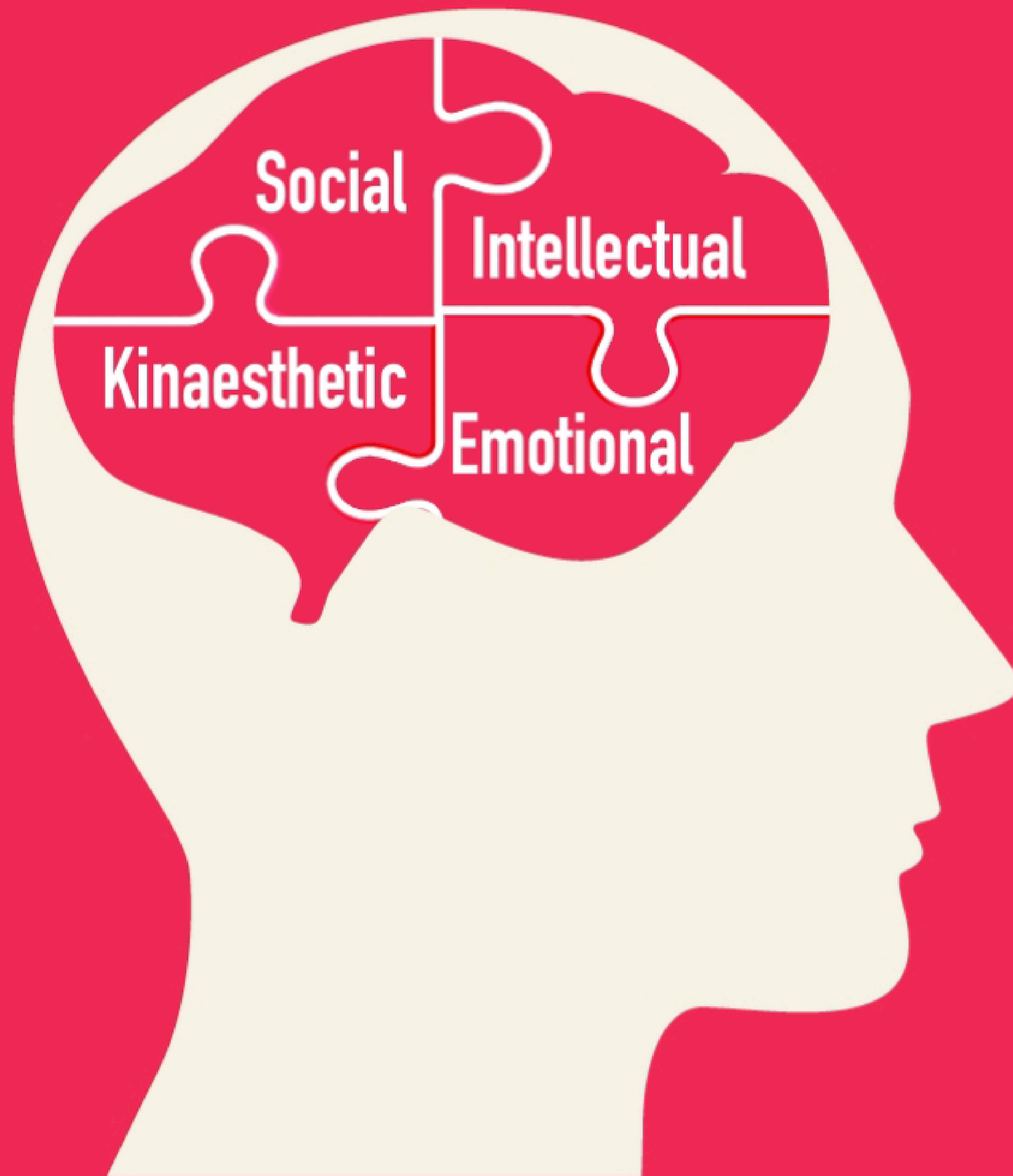
**T**echnology

**E**ngineering

**M**athematics



# Machine 'smartness' $\neq$ human intelligence







**Machines  
don't do  
relationships!**



Anger

Fear

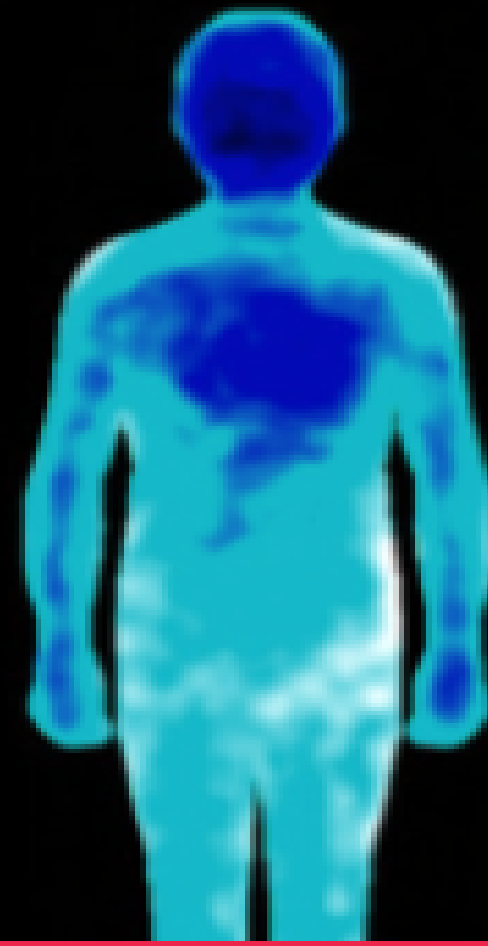
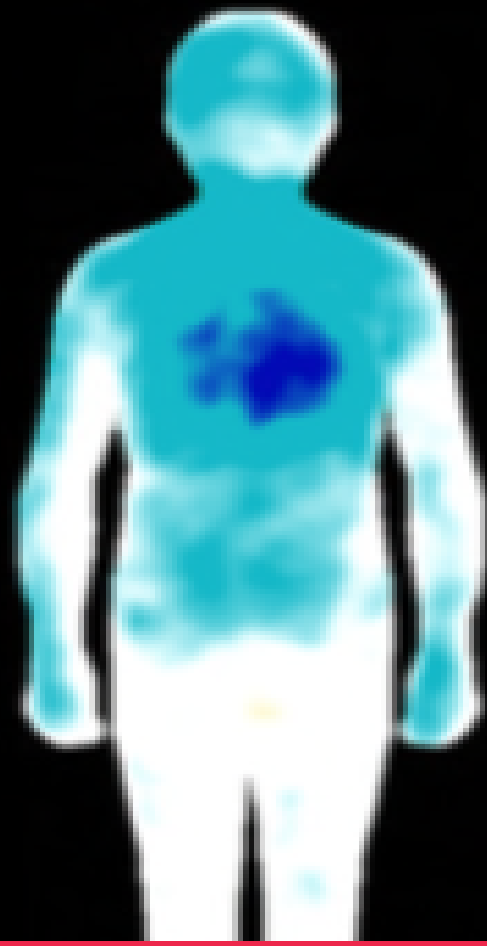
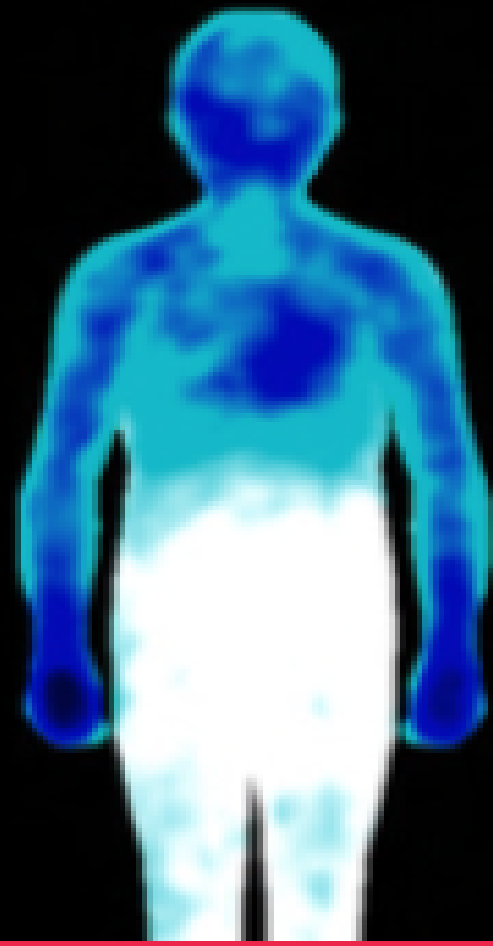
Disgust

Happiness

Sadness

Surprise

Neutral



We think with the body not the brain (Seligman et al)

Anxiety

Love

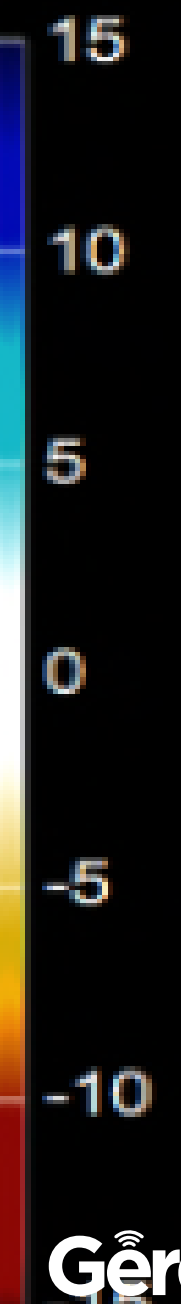
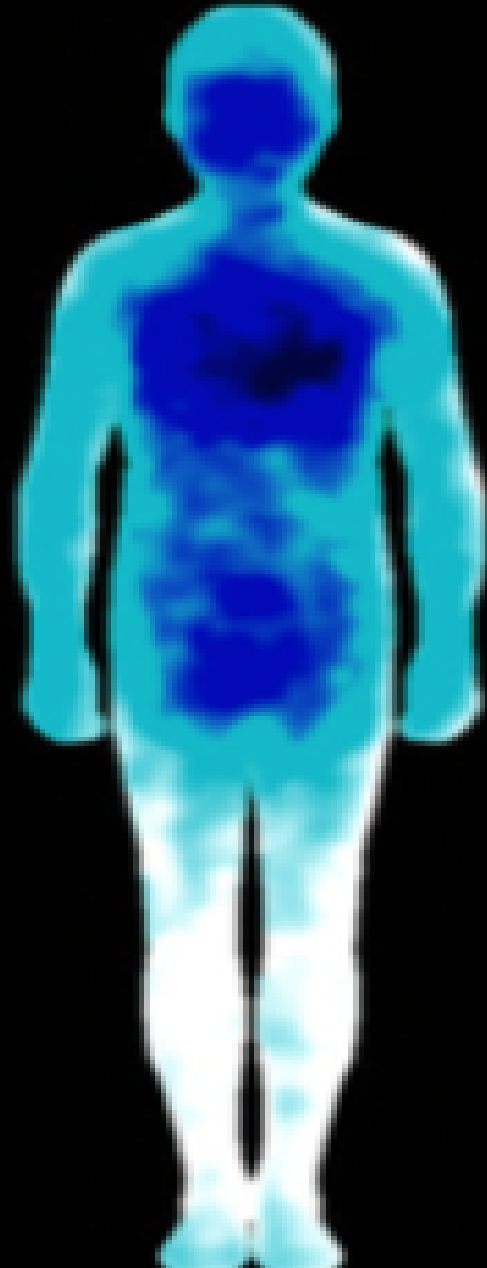
Depression

Contempt

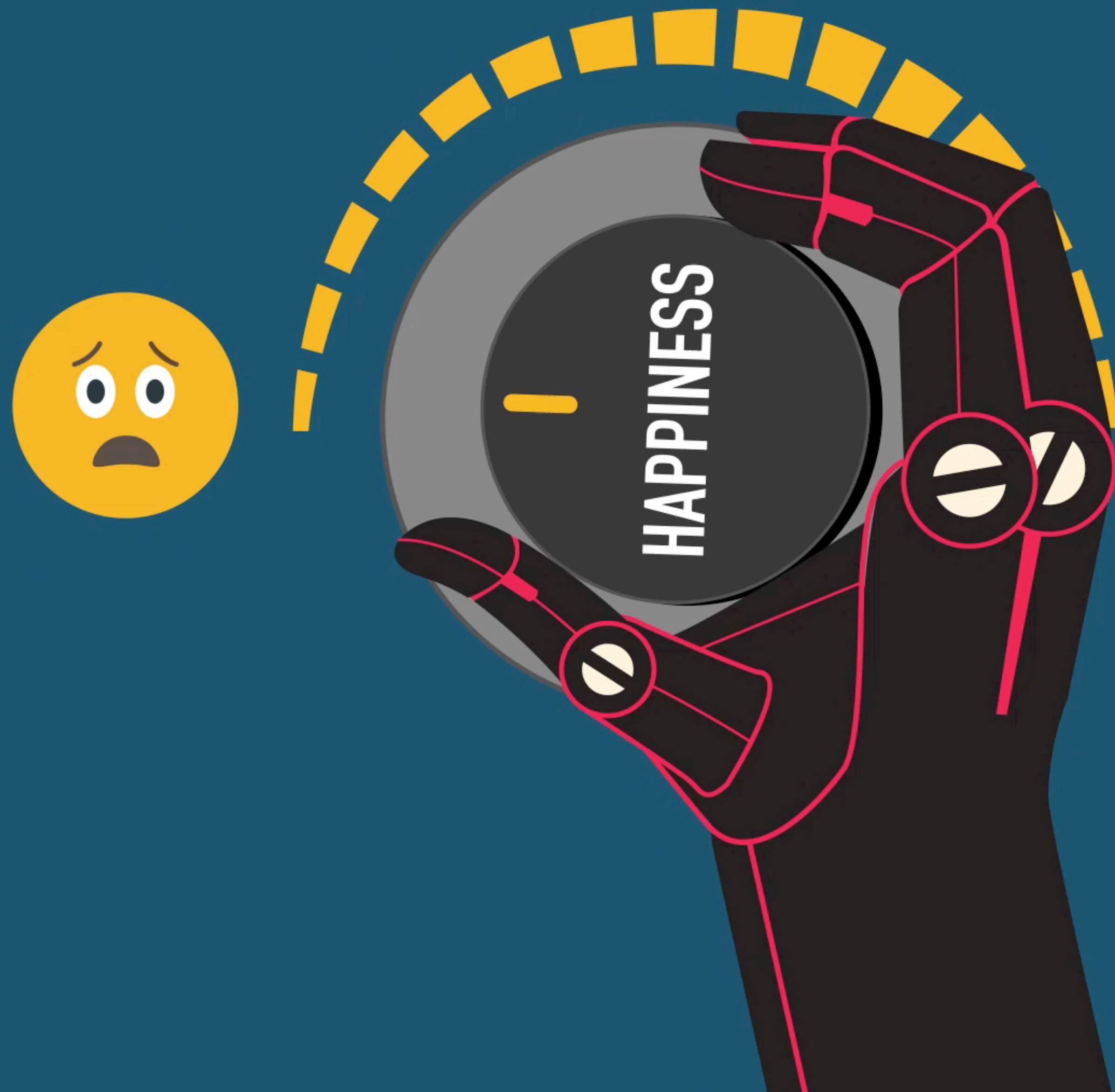
Pride

Shame

Envy







Happiness  
is not an  
algorithm,  
and humans  
aren't code!



# Technology is not **what** we seek, but **how** we seek



**POSITIVITY**



**ENGAGEMENT**



**RELATIONSHIPS**



**MEANING**



**ACCOMPLISHMENT**







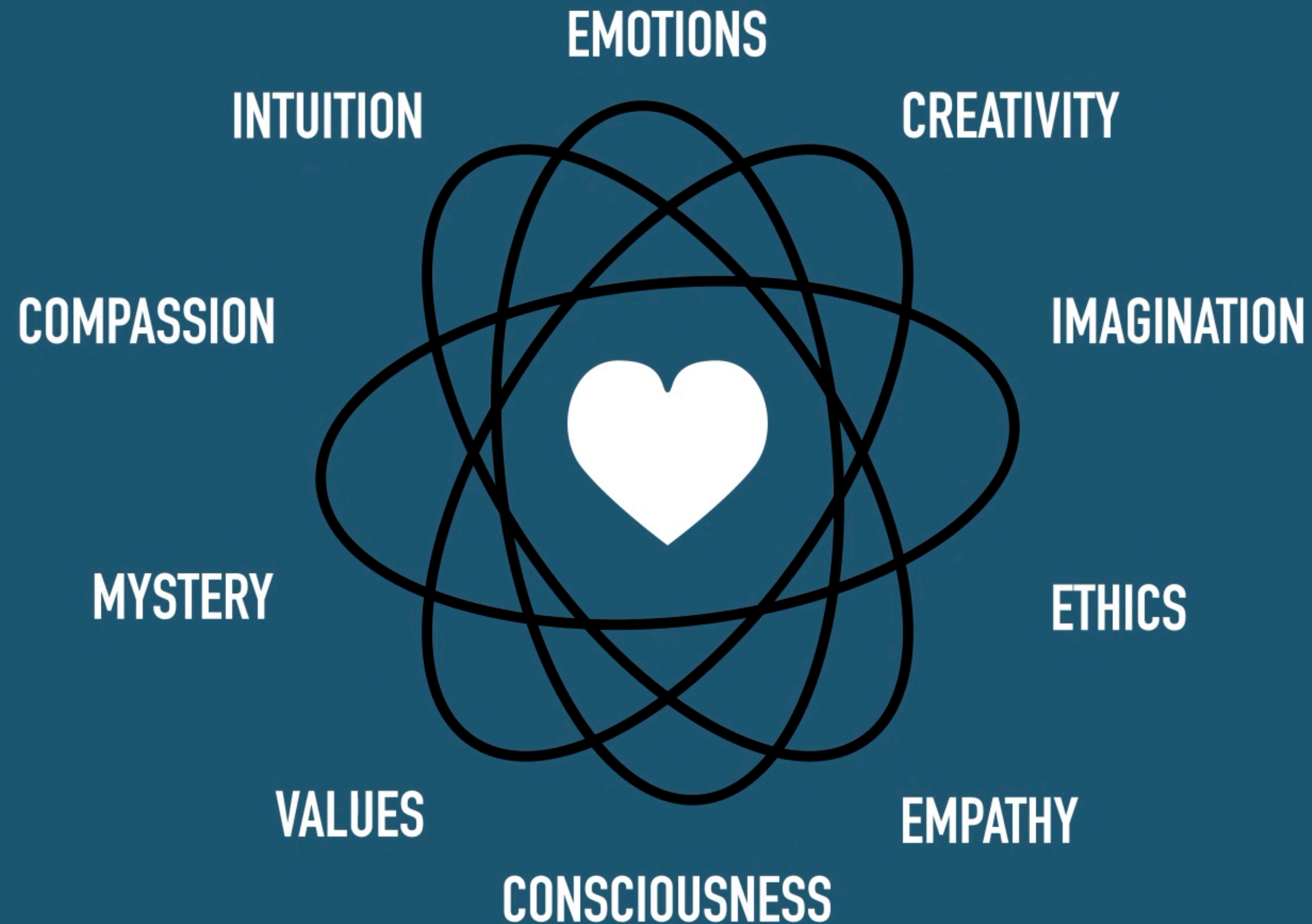
# The End of Routine is coming

But the end of routine tasks does not mean the end of human work!

# ROUTINE



...because anything that cannot be digitized or automated will become even more valuable



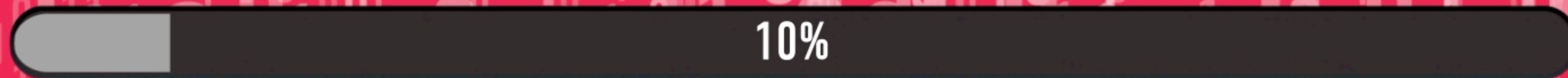


**The future is better than we think \***  
**... we just need to make sure we design it WISELY**





# Reduce the fear but keep the caution!





THE  
FUTURE

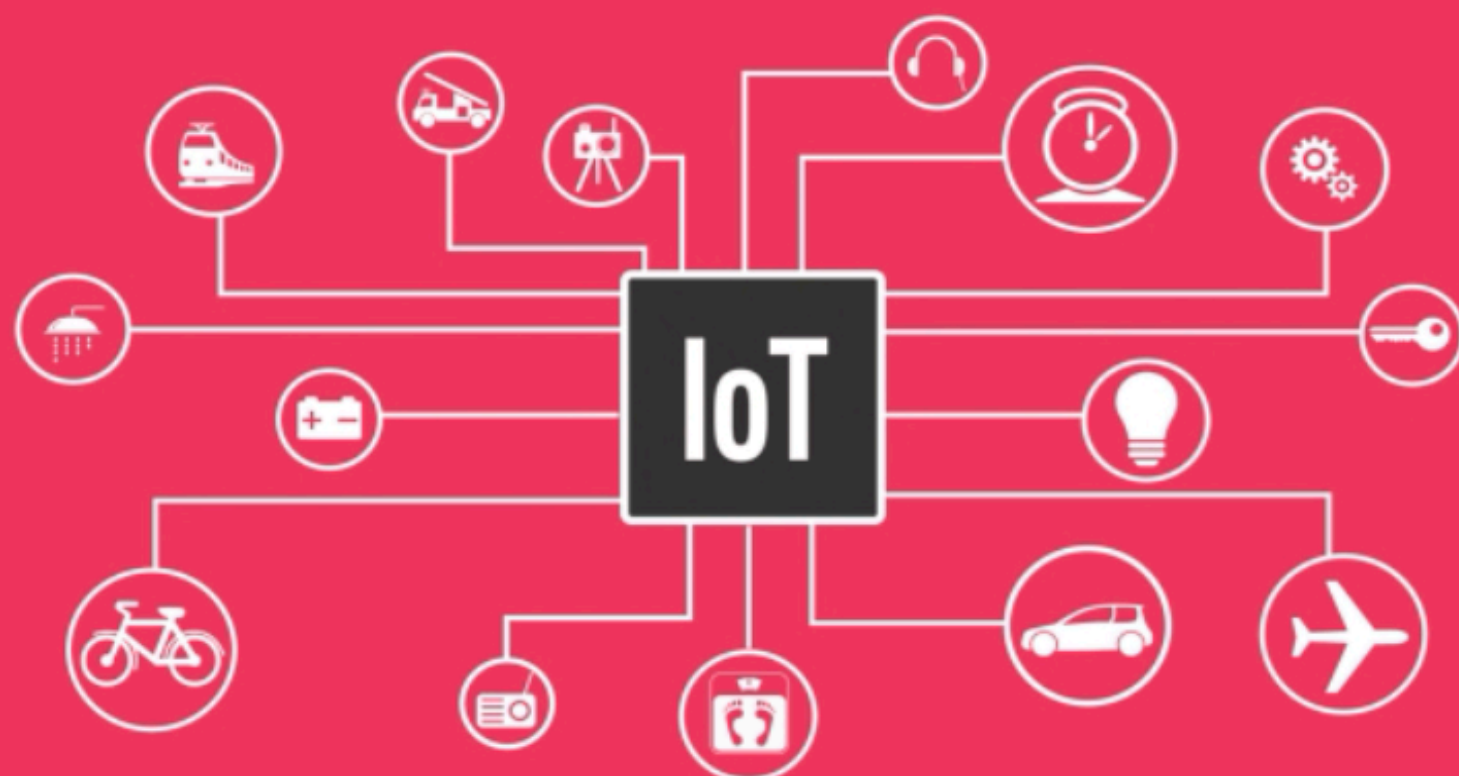


Humanity ON-TOP of Technology





We must start to educate for a radically different world – and for a new economic logic!






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**We must invest as much in  
humanity as we do in technology**



# Embrace technology but don't become it!







# Thanks for your time!



WE NEED TO TALK ABOUT AI



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