TECHNOLOGY IS NOT NEUTRAL

So What? Now What?

Stephanie Hare @hare_brain

INTRODUCTION

WHAT IS TECHNOLOGY ETHICS?

- Mission (im)possible
- Ethics refresher
- Progress, negativity, neutrality?

THE DEBATE

- Technology is neutral
- Technology is not neutral

FROM DIAGNOSIS TO SOLUTION

- So what? Now what?
- Crash test dummies, chips

SPEAKER

EXPERIENCE

- Researcher, broadcaster, author
- Principal Director, Accenture Research
- Strategist, Palantir
- Visiting Fellow, St Antony's College, Oxford
- Senior Analyst, Oxford Analytica
- Consultant, Accenture

EDUCATION

- PhD, International History, LSE
- MSc, Theory and History of International Relations, LSE
- BA Liberal Arts and Sciences, University of Illinois at Urbana Champaign/ la Sorbonne

INFLUENCES

OUR 2-DAY AGENDA

Technology ethics explores a question that no one has been able to answer to anyone's satisfaction: how can we create and use technologies that maximise benefits and minimise harm? This two-day lecture series will demonstrate how philosophy is a powerful tool that we can use to make and use technology more ethically.

On day 1, we will consider the question "Is technology neutral?" and examine a debate between various experts who take different sides on this question. Our aim is not to agree with them (or even with each other!) but rather to map out the different ways we can answer the question and apply it to our lives.

On day 2, we will practice putting technology ethics into action by considering technologies that are used today for their undeniable benefits -- yet which pose serious ethical problems that we cannot afford to ignore. We will diagnose their risks and opportunities and propose solutions, drawing on examples that range from the surprisingly straightforward to those which do not have one solution or cannot be solved only once.

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MISSION (IM)POSSIBLE

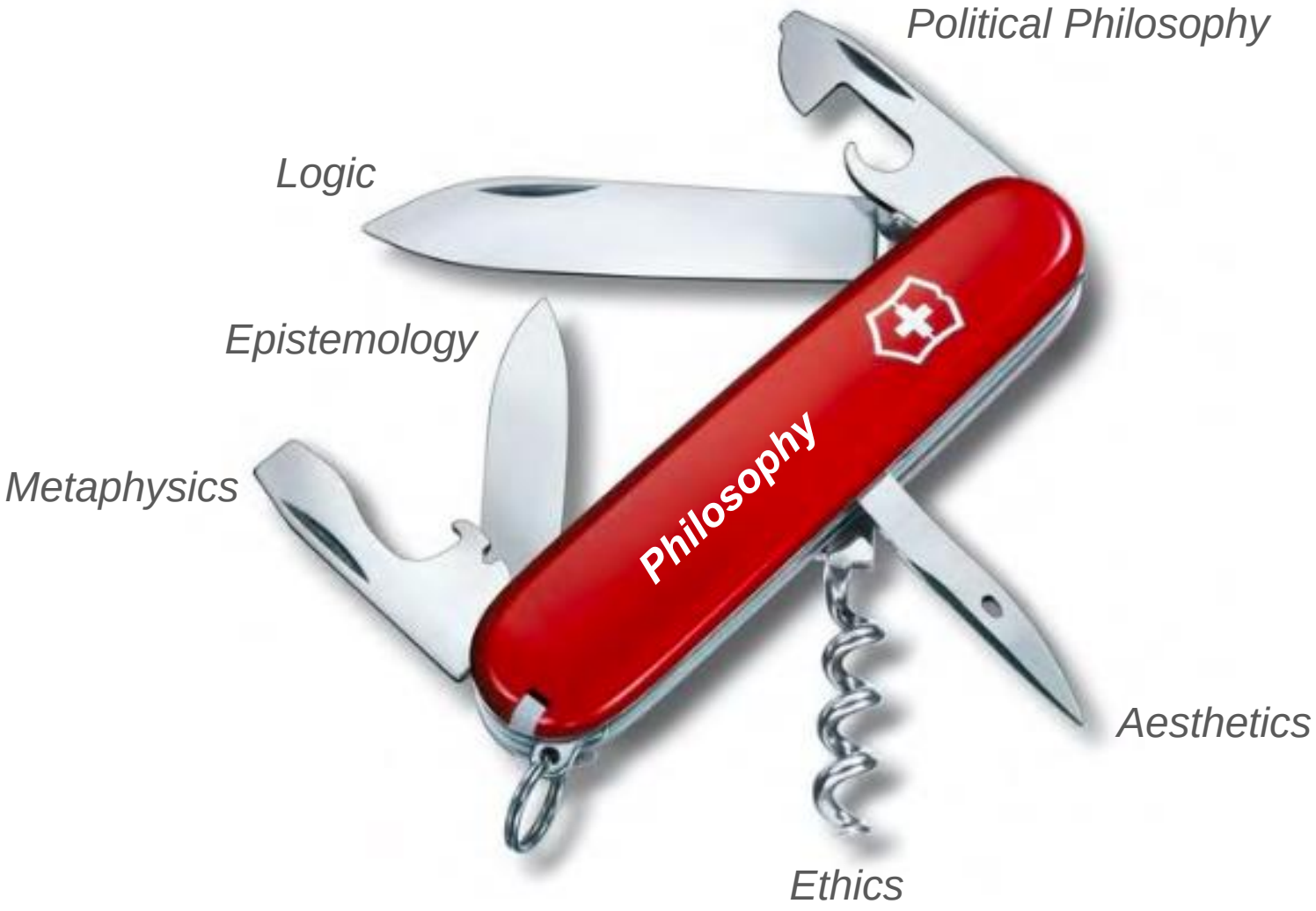
How to create and use technologies

so that they deliver

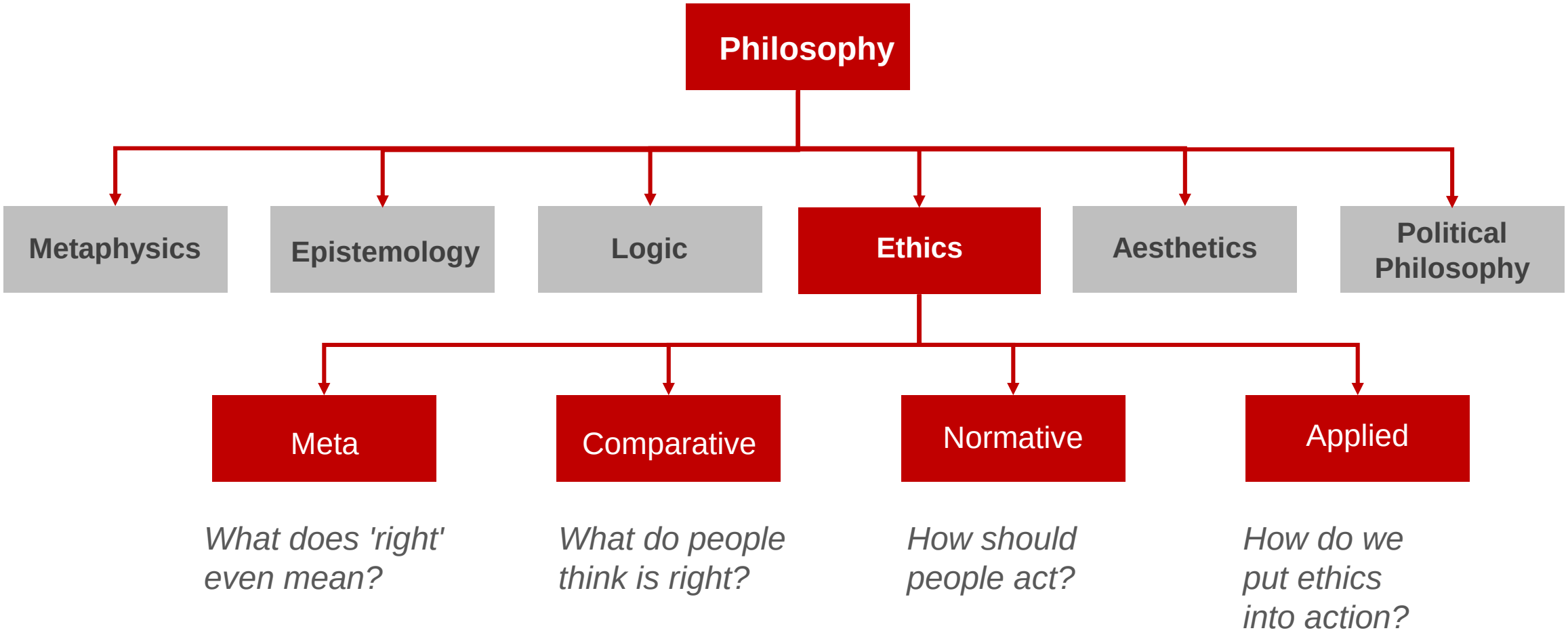
maximum benefit +

minimum harm?

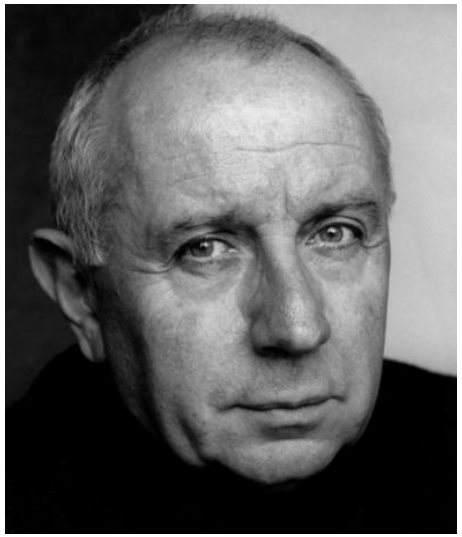
PHILOSOPHY AS A TOOL



PHILOSOPHY AS SOFTWARE OF THE MIND



PROGRESS, NEGATIVITY, NEUTRALITY?



“When you invent the **ship**, you also invent the **shipwreck**; when you invent the **plane** you also invent the **plane crash**; and when you invent **electricity**, you invent **electrocution**...

Every technology carries its own **negativity,** which is invented at the same time as technical **progress**.”

Paul Virilio, *Politics of the Very Worst: An Interview with Philippe Petit,* edited by Sylvère Lotringer, translated by Michael Cavaliere (New York: Semiotext(e), 1999, p. 89).

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EXPERTS WHO ARGUE THAT TECHNOLOGY IS **NEUTRAL**

GARY KASPAROV

Chess grandmaster + author of *Deep Thinking: Where Machine Intelligence Ends and Human Creativity Begins*

“Tech is agnostic*, it amplifies us.
‘Ethical AI’ is like ‘ethical electricity’.”

By ‘agnostic’, Kasparov means that technology that works across any platform, protocol or device without requiring any adaptation.

WERNER VOGELS

Chief Technology Officer @ Amazon

‘Mr Vogels **doesn’t feel it's Amazon’s responsibility to make sure Rekognition is used accurately or ethically.**

“That’s **not my decision to make**,” he tells me. “This technology is being used for good in many places. It’s in **society**’s direction to actually **decide which technology is applicable under which conditions.** “It’s a societal discourse and decision - and policy-making - that needs to happen to decide where you can apply technologies.”

He likens ML and AI to steel mills:

> **Sometimes steel is used to make incubators for babies,** he says, but **sometimes steel is used to make guns.**

PROFESSOR DANIELA RUS

Director of the Computer Science and AI Lab @ MIT

“I’m a roboticist. Now when I tell people what I do, I get one of two types of reactions. Some people get anxious. They make jokes about Skynet. And they ask me, ‘When will the robots take over my job?’ And then other people get very excited and ask me, ‘When will my car be self-driving?’

Well, I belong to the second group. But I believe it’s very important to understand the concerns of the first group and provide ideas and suggestions for how to see things differently.

And this starts with understanding that **AI** and **robotics** and **machine learning are tools.** They are just tools, **by the people, for the people**. They are incredibly powerful tools. But **like any other tools, they’re not good or bad. They are what we choose to do with them.**”

PAUL DAUGHERTY

Chief Technology + Information Officer @ Accenture

“Is technology, and Artificial Intelligence, good or bad?

The answer is **NEITHER**. Technology is neutral, AI is neutral.

The way ‘we’, as humans, apply and use the technology is what defines if the impact is good or bad. [….]

Given the increasingly pervasive, and invasive, impact of technology on the way we work and live, **ETHICS** is no longer a peripheral issue in business, nor something you think about after the fact. The choices we make are critical.

Ethics must be core to a company’s strategy, culture, operations, and technology.”

EXPERTS WHO ARGUE THAT TECHNOLOGY IS

NOT NEUTRAL

SIR TIM BERNERS-LEE

Creator of the World Wide Web

“As we’re designing the system, we’re designing society. **Ethical rules that we choose to put into that design [impact society]…**

Nothing is self-evident. Everything has to be put out there as something that we think will be a good idea as a component of our society.”

CAROLINE CRIADO PEREZ

Author of the prize-winning *Invisible Women: Exposing Data Bias in a World Designed for Men*

“ **Technological innovation overwhelmingly ignores women at every stage,** from the mainly male composition of the teams that fund and create technologies, to the absence (sometimes deliberate, often unthinking) of women’s data in data science, product design and implementation, and policymaking. ”

PROFESSOR SHEILA JASANOFF

Science & Technology @ Harvard,

author of *The Ethics of Invention*

“**The same technologies** can be found from Kansas to Kabul, but **people experience** them **differently** depending on where they live, how much they earn how well they are educated, and what they do for a living.

The ‘default human’ for whom most technologies and tools are designed **is almost always a man, often a white, heterosexual man of a certain body shape and size,** and **assuming a globality that simply does not exist.**

This matters, Jasanoff explains, because **the difference in impact is not limited to how we *individually* experience technological innovation; it can also change our relationships with one another, and even *with our environment.*** ”

PROFESSOR SAFIYA NOBLE

Co-Director of the Center for Critical Internet Inquiry @ UCLA + author of *Algorithms of Oppression: How Search Engines Reinforce Racism*

> “Algorithms are not nameless, faceless bots … behind every algorithm are real people who bring their own biases to the inner workings of the web.”

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FROM DIAGNOSIS TO SOLUTION

SO WHAT?

Situation: There is an infinite supply of problems.

Complication: Our means to solve problems are finite and usually constrained (time, energy, money, people, other resources, state of knowledge/capabilities).

Question: How can we determine which problems to solve?

Resolution: Prioritise according to mission (who cares?), means, incentives, penalties, etc.

NOW WHAT?

- *What* is the problem we are trying to solve?
  - Is this the most valuable problem?
- *What* does success look like?
  - *How* we will know when we have reached it? (metrics)
- *What* action should be taken?
  - *Why* take this action?
  - *Who* should take this action?
  - *Who/what* is in scope and out of scope? (Who is this action for, and who is ignored?)
  - *Who* will be harmed by our solution and who will not be? (Impact)
- *Who*, if anyone, is already doing this or thinking about it? (*What* can we learn from them?)
- *Who* can advise/help test out our thesis?
- *How* will we know if we are wrong?
- ***Verdict****:* is this action worth taking? (Consider cost, ease of doing, is it a voluntary step or a legal requirement, etc.)

AGENDA DAY 2

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CRASH TEST DUMMIES

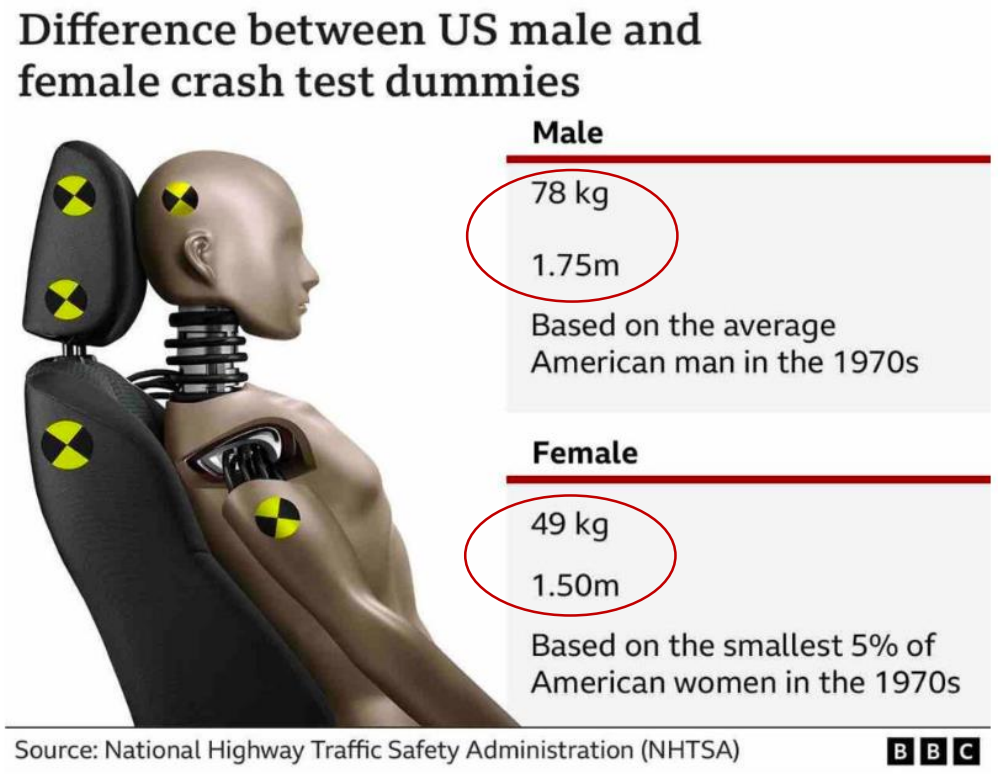
PHYSICS + ETHICS

Since the 1970s, crash test dummies - mechanical surrogates of the human body - have been used to determine car safety.

Even today the most commonly used dummy is based on the average male build and weight.

Yet women represent about half of all drivers and are more prone to injury in like-for-like accidents.

Currently there is no legal requirement for car safety tests for rear impact collisions to be carried out on anything other than the average man.



SOLVING THE MOST VALUABLE PROBLEM

Watch: SpaceX launched a Tesla Roadster into space

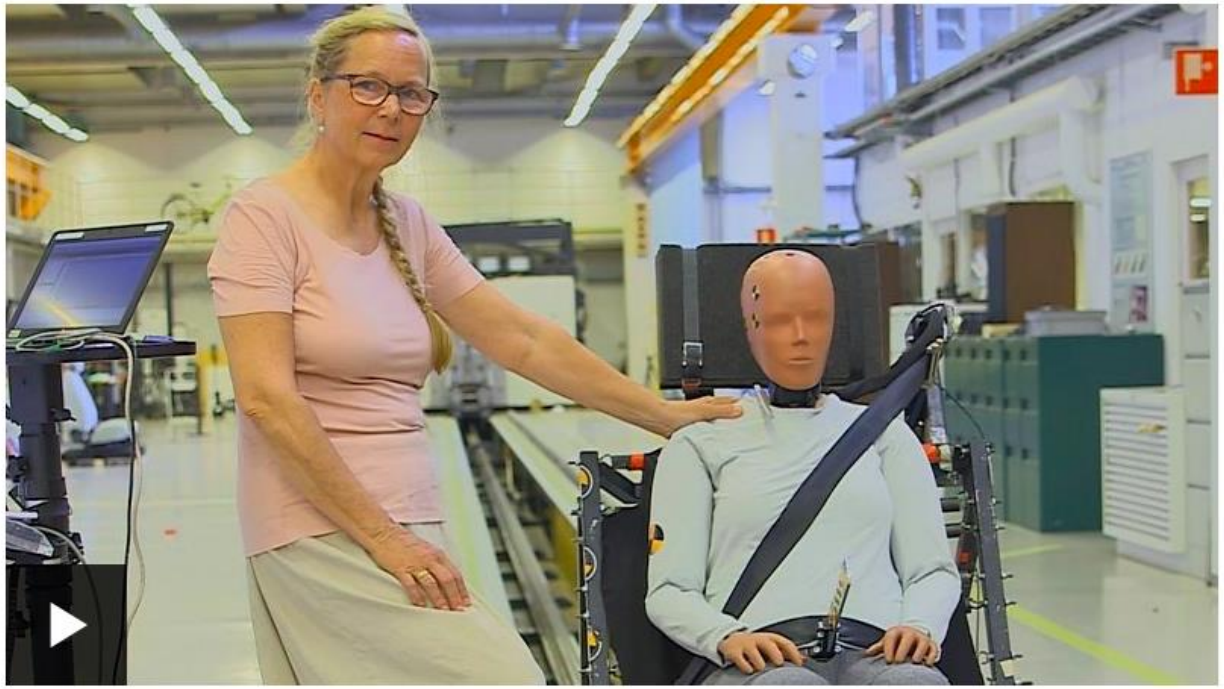
A cherry-red convertible orbited the Earth. Watch a replay here.

By Brian Resnick | @B_resnick | brian@vox.com | Updated Feb 7, 2018, 10:24am EST

SHARE

The crash dummy aimed at protecting women drivers

28 October

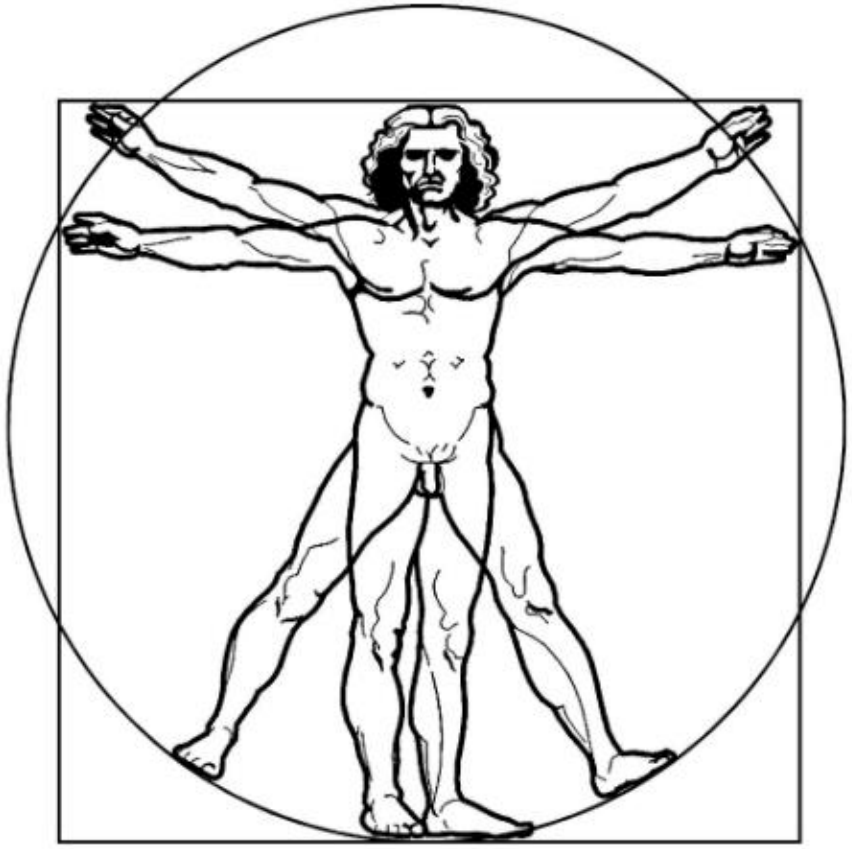


Dr Astrid Linder is leading the development of the first dummy modelled on the average woman

FACIAL RECOGNITION

TECHNOLOGY

Biometrics = data about your body + behaviour



Creepy Factor: **MAXIMUM**
Your face and emotions
can be captured without your knowledge

FIRST GENERATION

- **Specific regulation for police use only**
- **No specific regulation for other branches of government or for private companies**

DNA

Fingerprints

SECOND GENERATION

- **No specific regulation for anyone**
- **May fall under general data protection laws but not challenged**

Face

Emotions

Footprints

Eye (iris, retina)

Voice

Finger geometry (size and position of fingers)

Heartbeat

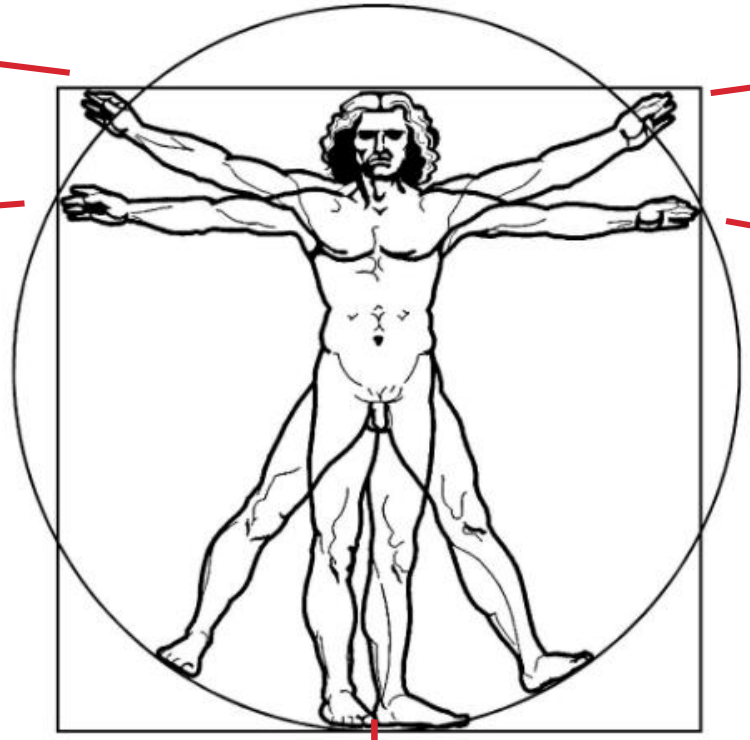
Veinprint

Behavioural (e.g. typing patterns, walking gait)

Biometrics --> the 'Extended Self'

Smartphone

Social media/online



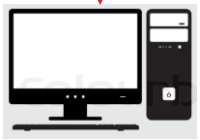
Microchip
(implanted in hand)

Wearable fitness device
(FitBit, Garmin, etc)

Home

Car

School



Workplace

City

Country

Biometrics technologies create + solve problems

Give citizens a digital identity	• E.g. India's Aadhaar system: face, iris, fingerprints	• Solution in search of a problem: humans have existed until now without a digital identity – give citizens an 'analog' ID to avoid the increase of surveillance and privacy risks
Verify your identity	• passports and visas use a facial biometric (photo), sometimes fingerprints • driving licenses use a facial biometric (photo) • EU identity cards to use facial biometric and 2 fingerprints by 2020 (proposal)	• Mission creep: We are relaxed about photos, but now we are seeing fingerprints (used to just be when getting arrested!) and face (to access our phone). What next: DNA? Iris scan? Everything? After all, we must be secure! • Increases risk of surveillance and destroys privacy
Identify you in a crowd	• police use of facial recognition technology at football matches, in London, South Wales • police use of DNA to determine suspects in an investigation or connections to suspects	• FRT is highly inaccurate for people of colour and women. But even if we solve inaccuracy, this increases risk of surveillance and destroys privacy • Chilling effect on civil liberties (e.g. freedom of expression, right to assemble)
Access something protected	• physical premise: home, workplace (photo, iris scan, fingerprint) • device: unlock smartphone with face, fingerprint, veinprint (1 billion x more accurate than a fingerprint) • bank account (RBS now using fingerprint)	• Security risk: Depends on how the biometric is stored: is it like on an iPhone (hashed, stored locally?) or would it be kept raw and/or on a server or in the cloud? Who else has access to this data?
Pay for things	• face (China), fingerprint (RBS)	• Security risk: Depends on how the biometric is stored: is it like on an iPhone (hashed, stored locally?) or would it be kept raw and/or on a server or in the cloud? Who has access to this data?
Airports	• Facial recognition technology for check-in is already in use at Atlanta and Dulles, coming to 20 US airports)	• Mission creep: airports (govts and private companies) now storing biometric databases of citizens and non-citizens alike. In the US, 4th Amendment infringement? In Europe, human rights infringement? Not regulated
Schools	• UK: Use fingerprint to register, pay for lunch, borrow books from the library • US: Use facial recognition/emotion detection to prevent school shootings???	• Mission creep aka where does it stop? Civil liberties/human rights violation as consent of child and parent not required in Scotland and Northern Ireland but is required in England and Wales; does not solve issue of kids bringing weapons to school; stressful for children to be monitored
Workplace	• Wearables to encourage heath and fitness outcomes • Emotion detection technology to flag fatigue, drunkenness, distraction, anger	• Employees 'health and emotions could be used against them • Risk of privacy, civil liberties and human rights violations
Prisons	• Face, iris, fingerprints used to track who is visiting prisoners in a UK prison	• Collects data of innocent people (visitors), human rights violation; could deter them from visiting prisoners (human rights violation)
Refugees	• Refugee camps: Accenture's 2020ID scheme: face, iris, fingerprints	• Replace lost ID documents, track aid, reduce fraud/corruption = human rights violation, these people have little power to refuse!

CAPTIVE AUDIENCE

SEMICONDUCTORS

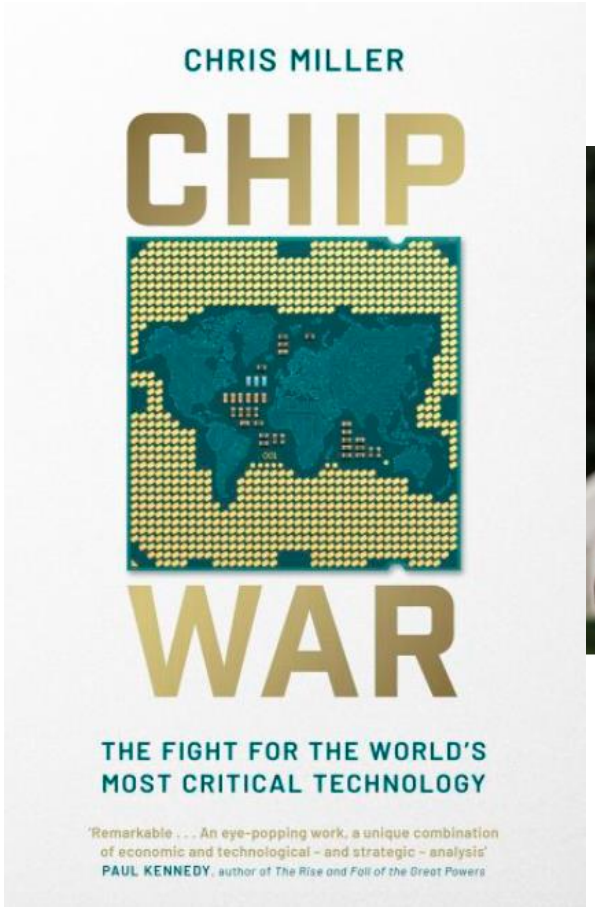
(CHIPS)


China produces 15% of all chips.
These are mostly low-tech, but the
industry is growing rapidly
South Korea produces
44% of all memory chips
8% of all processor chips
Japan produces 11% of all chips
Taiwan produces
41% of all processor chips and
more than 90% of the most advanced chips
Singapore produces
around 5% of all chips
Malaysia


United Kingdom
Netherlands
United States
Israel
China
Japan
Taiwan

POLITICAL PHILOSOPHY + ETHICS

> World War II was decided by steel and aluminum, and followed shortly thereafter by the Cold War, which was defined by atomic weapons.
>
> The next era, including the rivalry between the U.S. and China, is all about computing power.



FINANCIAL TIMES

HOME WORLD UK COMPANIES TECH MARKETS CLIMATE OPINION WORK & CAREERS

Nato

Washington steps up pressure on European allies to harden China stance

Biden administration pushes Nato to prioritise restraint of Beijing

3 HOURS AGO

Dutch chip toolmaker ASMI warns of escalating trade tensions

3 HOURS AGO

Sunak signals determination for UK to engage with China

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UK firms 'threatened by lack of strategy' on microchips

Katie Prescott, Technology Business Editor

Tuesday November 29 2022, 12.01am GMT, The Times

silicon semiconductor wafer manufacture at the Newport Wafer Fab, e company

GETTY IMAGES

BBC NEWS POLITICS

BBC Politics @BBCPolitics · 13m

Official

Golden era of UK-China relations is over, says PM Rishi Sunak

bbc.com

Rishi Sunak: Golden era of UK-China relations is over

The British prime minister says the UK needs to show "robust pragmatism" towards global competitors.

Not an ordinary news day…

THANK YOU

Stephanie Hare @hare_brain