



Dirk Helbing (ETH Zurich)
dhelbing@ethz.ch

Education 4.0: Preparing for the Digital Age

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Digital Literacy and Digital Enlightenment



Aufklärung ist der Ausgang des Menschen aus seiner selbstverschuldeten Unmündigkeit. Unmündigkeit ist das Unvermögen, sich seines Verstandes ohne Leitung eines anderen zu bedienen. Selbstverschuldet ist diese Unmündigkeit, wenn die Ursache derselben nicht am Mangel des Verstandes, sondern der EntschlieÙung und des Mutes liegt, sich seiner ohne Leitung eines anderen zu bedienen. Sapere aude! Habe Mut, dich deines eigenen Verstandes zu bedienen! ist also der Wahlspruch der Aufklärung.

(Immanuel Kant)

Where is the
digital revolution heading?









ebay

amazon



The Internet of Things



Things Will Get Senses and Smart





1 **NEW**
DEFINITION
IS ADDED ON
urban

1,600+
READS ON
Scribd.

13,000+ HOURS
MUSIC
STREAMING ON
PANDORA

12,000+
NEW ADS
POSTED ON
craigslist

370,000+ MINUTES
VOICE CALLS ON

skype™

98,000+
TWEETS

320+
NEW
twitter
ACCOUNTS

100+
NEW
Linked in
ACCOUNTS

1 associatedcontent
NEW
ARTICLE IS
PUBLISHED

6,600+
NEW
PICTURES ARE
UPLOADED ON
flickr™

50+
WORDPRESS
DOWNLOADS

695,000+
facebook.
STATUS
UPDATES

125+
PLUGIN
DOWNLOADS

79,364
WALL
POSTS

510,040
COMMENTS

Google

Google Search

168 MILLION
EMAILS
ARE SENT

694,445
SEARCH
QUERIES

60+
NEW
BLOGS

1,500+
BLOG
POSTS

70+
DOMAINS
REGISTERED

600+
NEW
VIDEOS



100+

40+

Answers.com

YAHOO! ANSWERS

QUESTIONS
ASKED ON THE
INTERNET...

25+ HOURS
TOTAL
DURATION



THE
LARGEST
SOCIAL READING
PUBLISHING COMPANY



20,000+
NEW
POSTS ON
tumblr.

13,000+
iPhone
APPLICATIONS
DOWNLOADED

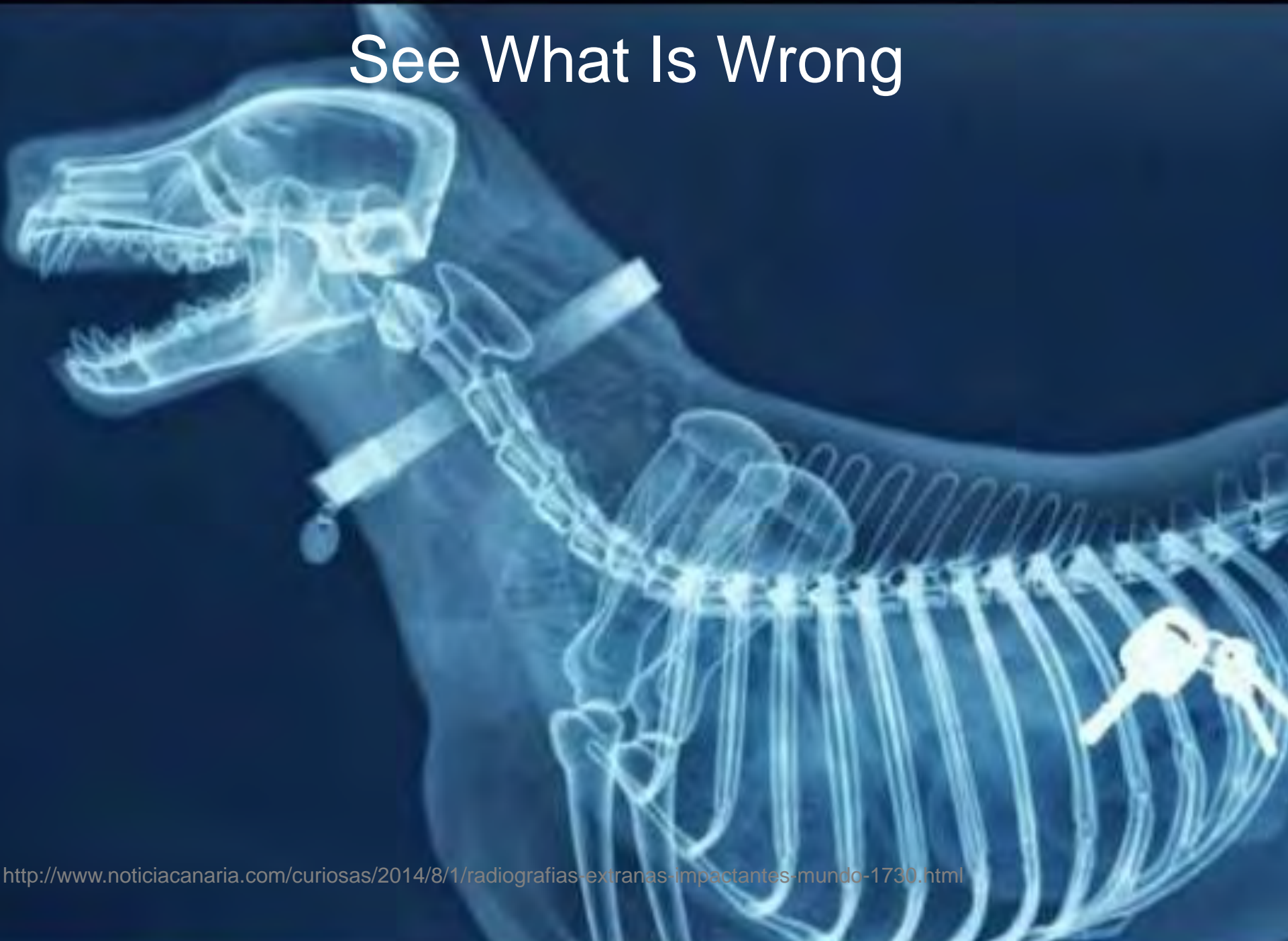


CHRIS ANDERSON'S DREAM:

The end of theory: the data deluge makes the scientific method obsolete.

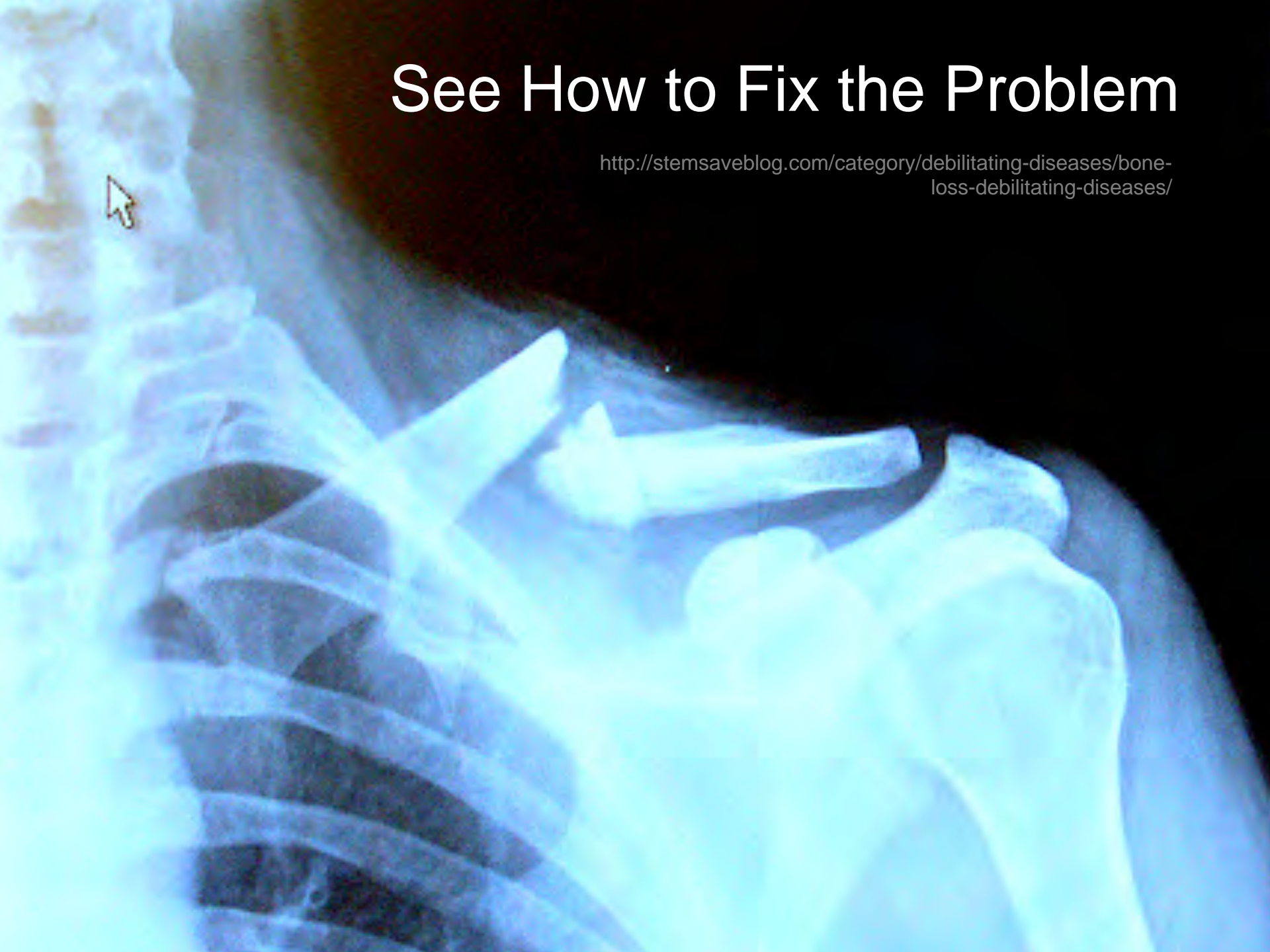
Wired Magazine 16(7), 2008

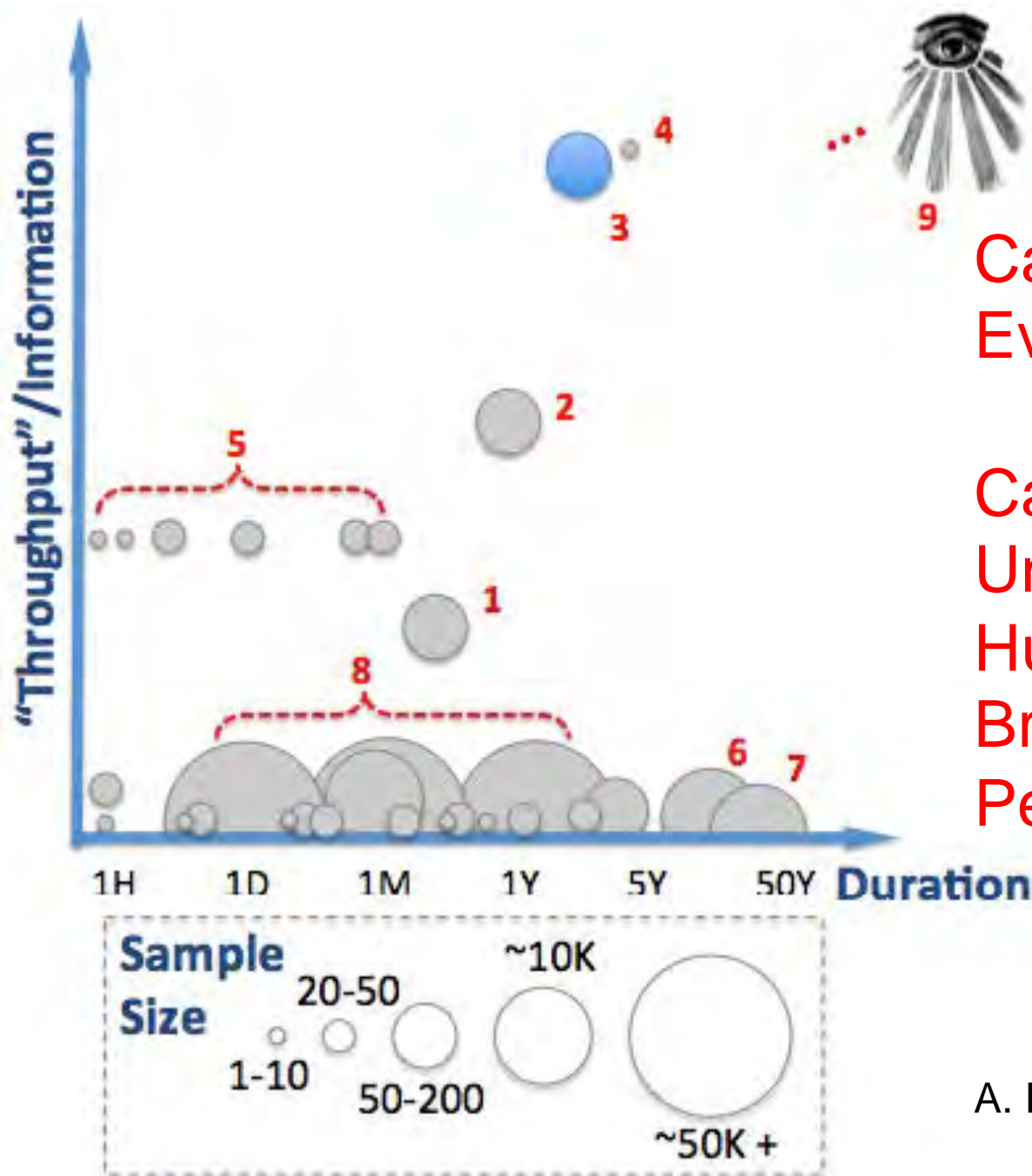
See What Is Wrong



See How to Fix the Problem

<http://stemsaveblog.com/category/debilitating-diseases/bone-loss-debilitating-diseases/>





Can We Know Everything?

Can We Understand the Human Body, Brain and Personality?

A. Pentland et al.

GET ALL THE
INFORMATION YOU CAN,
WE'LL THINK OF A
USE FOR IT LATER.



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JON & KATE ^{PLUS} **Eight**



Jon and Kate Plus Ei8ht: The Complete Season 4 (6 DVD Set)

Starring: [Jonathan Gosselin](#), [Kate Gosselin](#) **Director:** [Jennifer Stocks](#) **Format:**

List Price: ~~\$49.98~~

Price: **\$29.99** & this item ships for **FREE** with Super Saver Shipping. [Details](#)

You Save: **\$19.99 (40%)**

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[Hanging Ceiling Fan](#)

★★★★★ (1) \$94.99



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★★★★★ (10) \$36.99

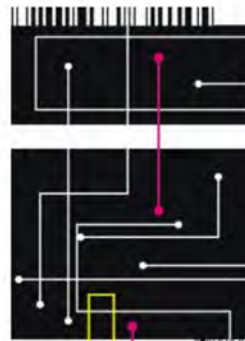
★★★

amazon





Was die Kreditkarte verrät



Digitale Spuren: Vier Transaktionen verraten die Person - Wissen ...

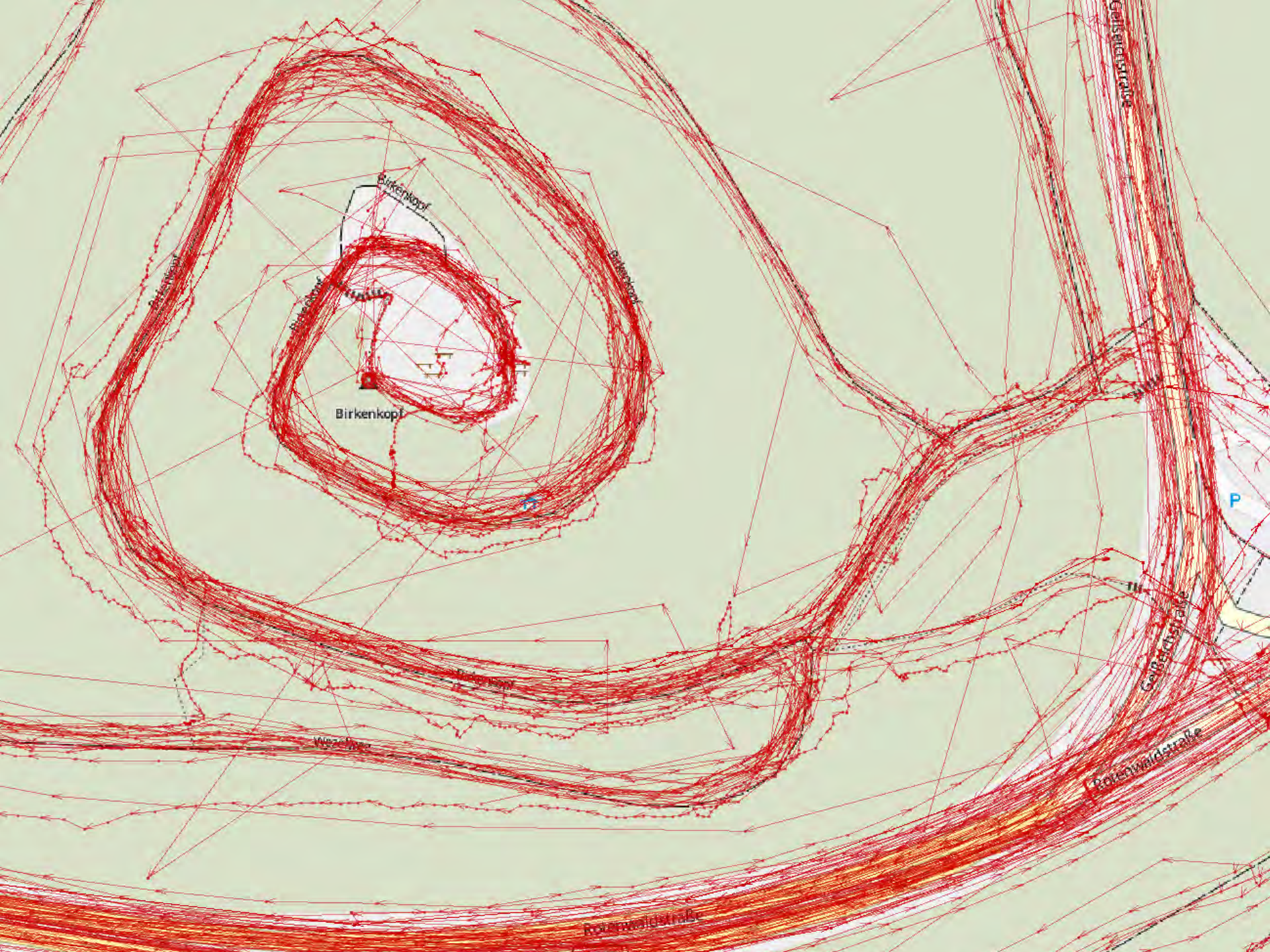
www.sueddeutsche.de › Politik › Datenschutz ▼ [Translate this page](#)

Jan 30, 2015 - Lediglich **vier Datenpunkte** reichten in den meisten Fällen aus, schreiben **sie** in der aktuellen Ausgabe des Fachmagazins *Science*, um eine Person in der Datenbank eindeutig zu **identifizieren**. Wenn man etwa das Konsumverhalten eines Freundes durchleuchten will, so genügen dafür also sehr einfache ...

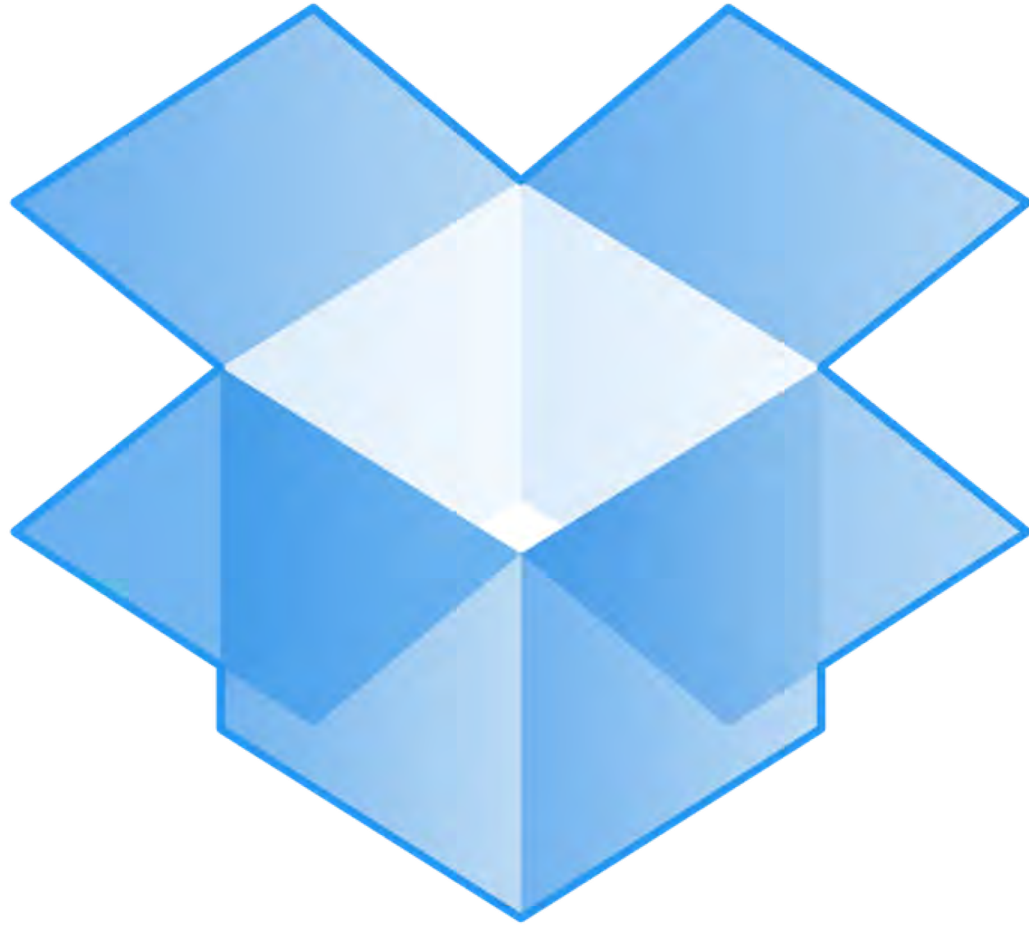


Illustration: Stefan Dimitrov

- Selbst große anonymisierte Datensätze bieten unter Umständen nur wenig Schutz, berichten Forscher im Fachmagazin *Science*.
- Die Wissenschaftler analysierten "einfach anonymisierte" Kreditkartentransaktionen von 1,1 Millionen Menschen über einen Zeitraum von drei Monaten hinweg.
- Anhand weniger Anhaltspunkte - wo jemand seinen Kaffee trank oder ins Restaurant ging etwa - konnten die Forscher die meisten Personen in der Datenbank reidentifizieren.







Dropbox





Middle Fork Lands Protected

In the last stretch of the Middle Fork Snoqualmie River Valley, another 14 acres have been protected by King County. "This is an important acquisition. Twenty years ago we didn't know what would become of the Middle Fork. Most of the lower valley was in private ownership and starting to be carved up into cabin sites, shooting, dumping, and craviness was the norm," says Doug Schneider, Deputy Director of the Gateway Trust. "Today, through the hard work of many, most of the 100,000-acre valley is in public ownership and the area is cleaned up and safe for families. This property is one of the last in-holdings we have been trying to acquire for 15 years."



This view looks north over Clifford Lakes toward Russian State in the Middle Fork Snoqualmie River Valley. Land in the area next to the Alpine Lakes Wilderness have been acquired over the past 20 years by the Washington State Department of Natural Resources.

Middle Fork News:

- The Washington State Department of Natural Resources received a grant to design a trailhead and make it the ground for acquisition.
- The Federal Highway Administration is working to acquire lands to pass about 7 miles of the Middle Fork Road. The project aims to improve public access and safety, replace many hole-punching stream culverts, and significantly cut gravel and sediment runoff during winter.
- The State Board of Natural Resources just approved adding several thousand acres of State Forest land in the valley into the Mount to Natural Resources Conservation Area.

Google

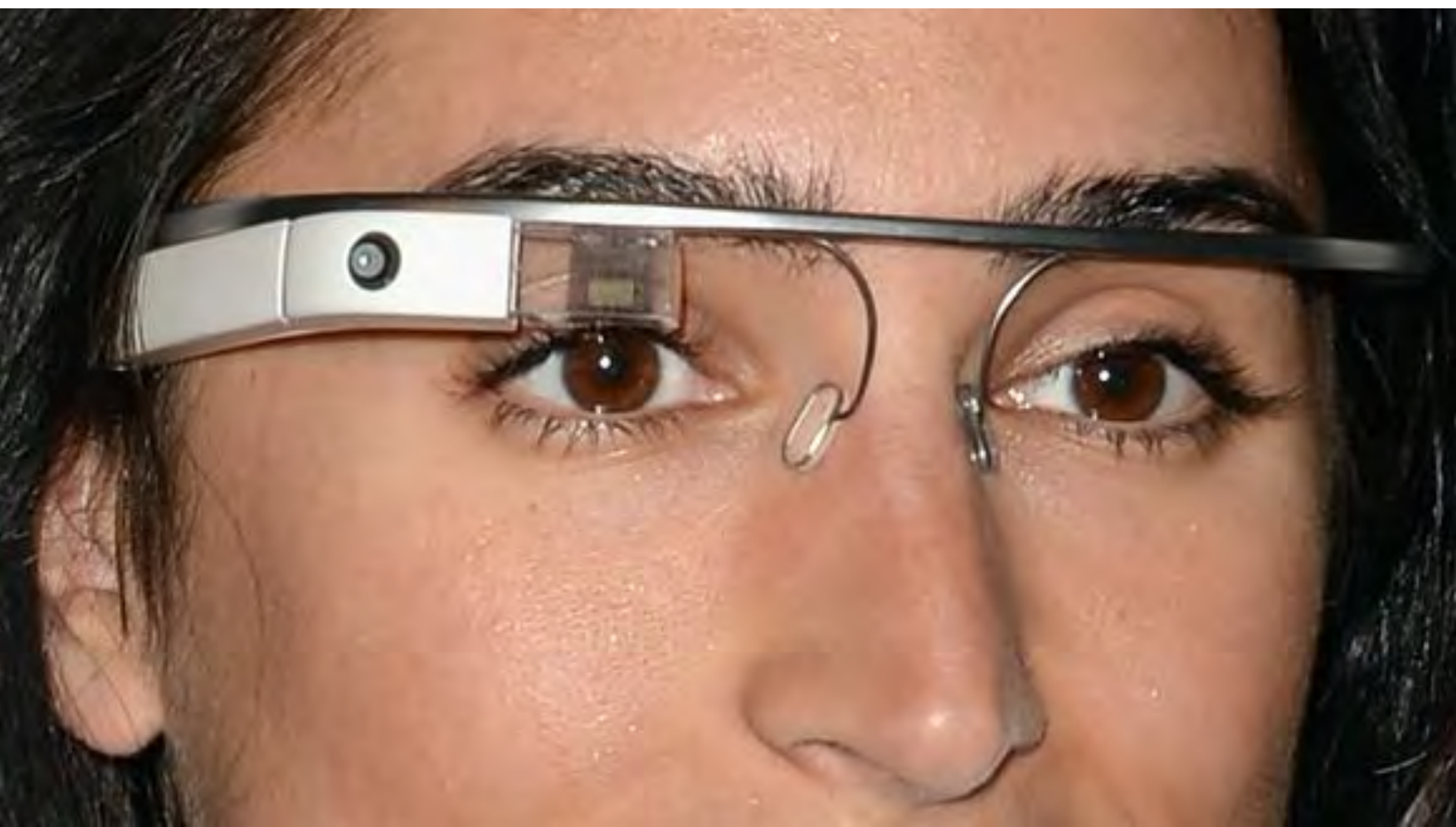
Google Search

I'm Feeling Puzzled



You





I'M WATCHING YOU



Der Spion, der aus dem Fernseher kommt

TV-Geräte der neuen Generation sind mit dem Internet verbunden. Was viele zu Hause nicht wissen: Manche Hersteller beobachten die Zuschauer beim Fernsehen.




Staubsauger sollen Wohnungen für Apple und Google vermessen

Der Roboter-Spezialist iRobot will gesammelte Daten verkaufen. Und Microsofts Paint wird nicht verschwinden.



Die Redaktion auf Twitter

Stets informiert und aktuell. Folgen Sie uns auf dem Kurznachrichtendienst.

 @tagesanzeiger folgen

1 | 4 **Vermessen:** Der Roboterstaubsaugerhersteller iRobot möchte künftig nicht nur Staub saugen, sondern auch Wohnungen und Häuser kartografieren und die gesammelten Daten Firmen wie Google, Apple oder Amazon verkaufen. Diese Pläne verkündet der Firmenchef in einem [Reuters-Artikel](#). Die drei Techkonzerne seien Fans dieser Idee. Offiziell äusserte sich allerdings keiner der drei. ([4 Bilder](#))



Überwachung via Rauchmelder Bundesnetzagentur warnt vor versteckten Mini-Kameras

🕒 25.04.16, 19:22 Uhr

✉ EMAIL

f FACEBOOK

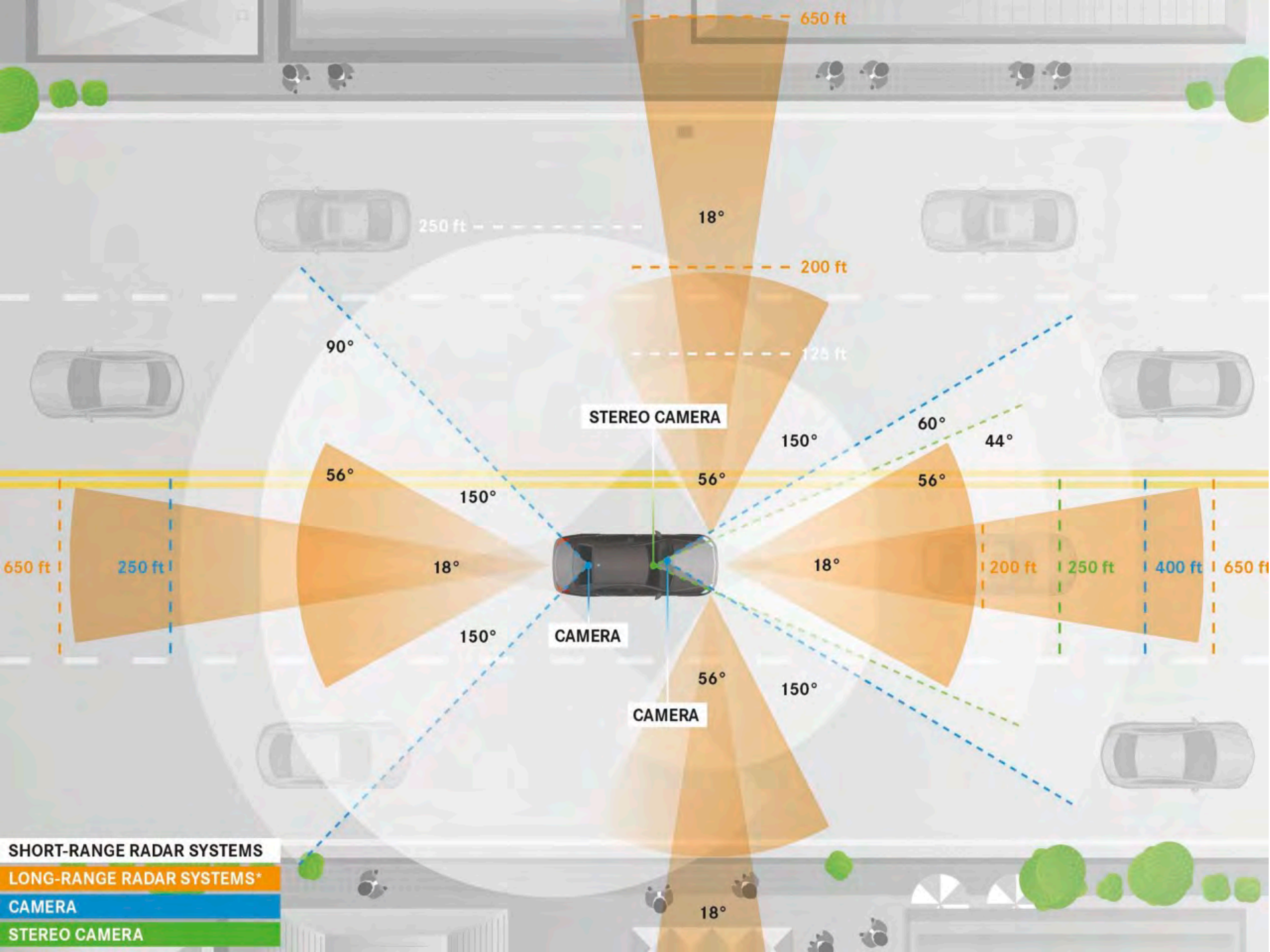
🐦 TWITTER

~ MESSENGER



Die Netzagentur warnt Splonen im eigenen Wohnzimmer.

Foto: dpa



SHORT-RANGE RADAR SYSTEMS
LONG-RANGE RADAR SYSTEMS*
CAMERA
STEREO CAMERA

Der gläserne Fahrer

Autohersteller spionieren ihre Kunden offenbar über ihre Apps aus. Ein Test zeigt: Sie sammeln viel mehr Daten als nötig – und geben diese teils unverschlüsselt weiter.

Von **Martin Sistig**

27. September 2017, 16:02 Uhr / [64 Kommentare](#)



How your car is SPYING on you: Experts reveal how automakers can track everything from your weight to the food you eat using in-built sensors

- Automakers track data through internet-connected systems in modern cars
- These systems can tell where you eat and shop, or the weather on your street
- Companies collect personal information from millions of vehicles worldwide
- Many of these firms keep tight-lipped about how and when they use this data

By [HARRY PETTIT FOR MAILONLINE](#) 

PUBLISHED: 14:45 BST, 16 January 2018 | **UPDATED:** 17:34 BST, 16 January 2018



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Experts have revealed the myriad ways that your car can spy on your personal habits.

Automakers track your vehicle's location, how fast you drive, what entertainment you listen to, through internet-connected systems in modern cars.

Newer cars can even record a driver's eye movements, the weight of people in the front seats, the weather on your street, and where you prefer to eat.

Companies use personal information collected from tens of millions of vehicles around the globe - and many keep tight-lipped about what they use the data for.





Petzende Pillen

Patienten können jetzt eine digitale Pille schlucken, die den Arzt per Smartphone informiert, ob sie ihre Arzneien einnehmen. VON EDDA GRABAR

[Bild vergrößern](#)



„Smarte Pillen“ können Informationen aus dem Darm senden, ob Patienten ihre Medikamente nehmen. Die Daten werden zunächst an ein... FOTO: PROTEUS DIGITAL HEALTH

Watson wertet Daten von Apple-Nutzern aus

IBM will mit seinem selbst lernenden Computersystem Watson die Gesundheitsdaten von iPhone- und Apple-Watch-Nutzern analysieren – und die Ergebnisse Dritten anbieten.

Von **Patrick Beuth**

14. April 2015, 11:35 Uhr / [12 Kommentare](#)





Handelsblatt.com - Nachrichten aus ...

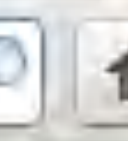
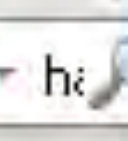
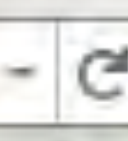


File Edit View History Bookmarks

Handelsblatt.co



Handelsblatt.com - Nachrichten aus Wirtsch...



13. Mai 2012



Han

Addition

DoubleClick

Facilitate Digital

Flashtalking

Google Analytics

GroupM Server

INFOnline

Ligatus

Nugg.Ad

ScoreCard Research Beacons

Axon Global

A **Cyber Security, Strategy & Innovation**

company empowering boards and companies to reclaim cyber dominance. If you're an officer of a company and want help protecting valuation, reputation, and critical operations, we're the ones to call.

3. Have your reputation, brand, or executives been targeted for social media attack or false news?

If you would like to know the general sentiment about your brand—based on what is collectively being said in social media—we can tell you. We have the rights to monitor over 64K social media providers (including all the major ones you would recognize). We deliver a report with details about who, what, where, and how people feel and also identify if there is critical mass forming toward social engineering for an escalated attack. We often detect bad actors in the reconnaissance phase, conducting cyber espionage or simply using false news to disparage their target. We deliver the report with advice on how to intercept it and in extreme cases, advise how to implement alternative services to stop it.

"Wir können alles mitlesen, was Sie eintippen"

Sicherheitslücken in Chips gefährden Milliarden Computer und Handys. Einer ihrer Entdecker sagt, wie gefährlich das ist und was Nutzer tun sollten. Ein Interview. VON OLIVER VOSS



Sicherheitsexperten der TU Graz haben die Schwachstellen entdeckt. Michael Schwarz, Moritz Lipp, Daniel Gruss (v.l.) FOTO: HELMUT LUNGHAMMER/TU GRAZ



Nackt im Netz

02.11.2016 21:27 Uhr

Die Daten entblößen alles

Millionen deutsche Internet-Nutzer werden ausgespäht. Wie ist zu verhindern, dass intime Daten öffentlich werden? VON SONJA ÁLVAREZ, KURT SAGATZ, CHRISTIAN TRETBAR UND CARSTEN WERNER







Primary Mood



DISAGREE

AGREE

Communication from
disappointment and sensitivity.
Need for strong contact.
Talkativeness from weakness.



Secondary Mood



DISAGREE

AGREE

Communication difficulties.
Struggle to express desires.

**Got it wrong?**[Read these tips & try again](#)

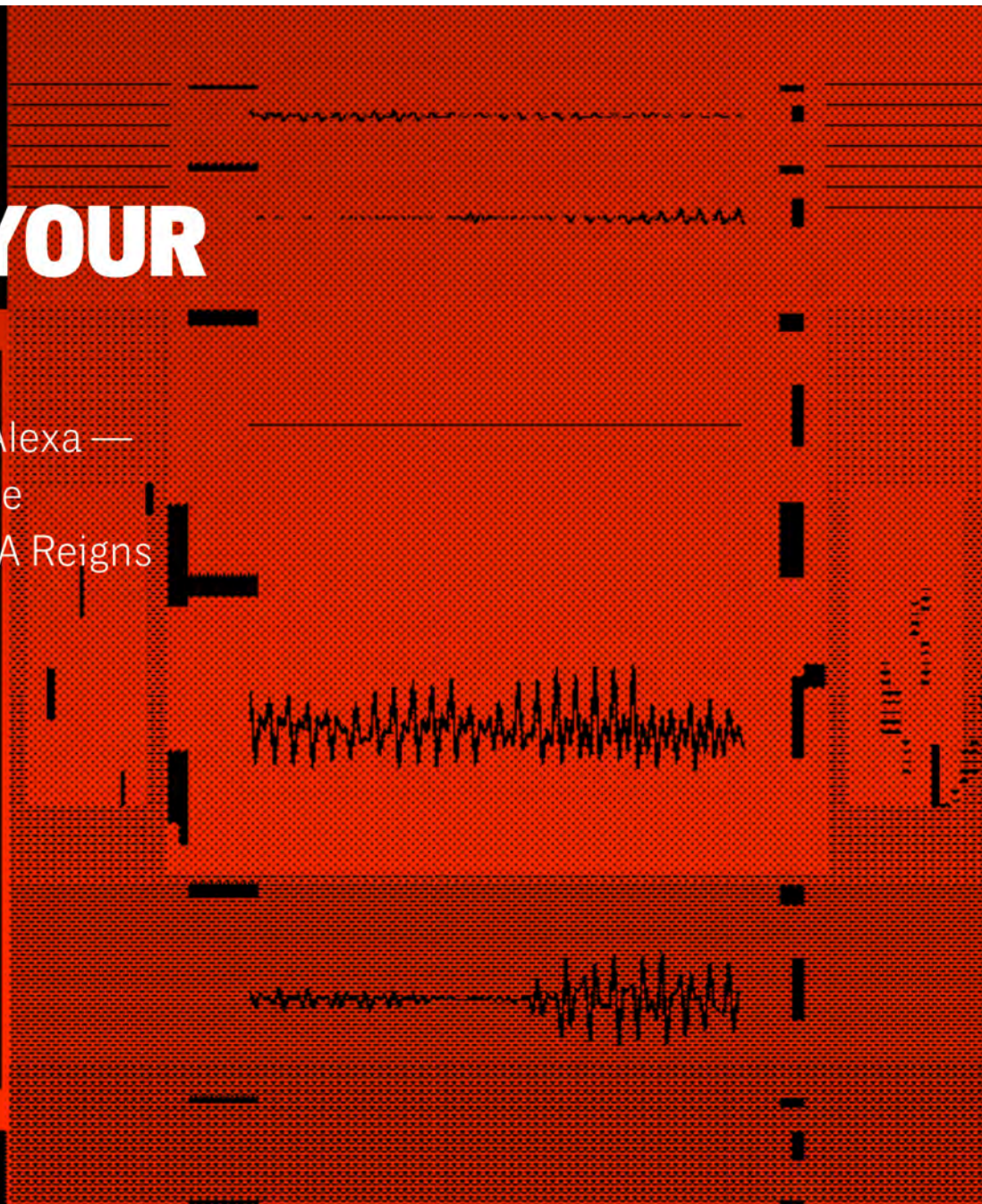
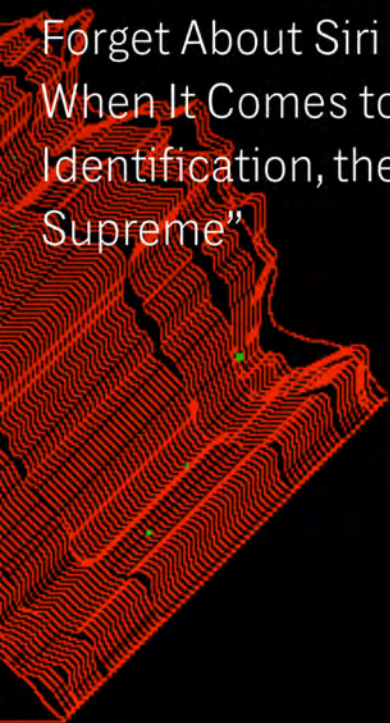
BEYONDVERBAL

THE EMOTIONS ANALYTICS COMPANY

The
Intercept_

FINDING YOUR VOICE

Forget About Siri and Alexa —
When It Comes to Voice
Identification, the “NSA Reigns
Supreme”



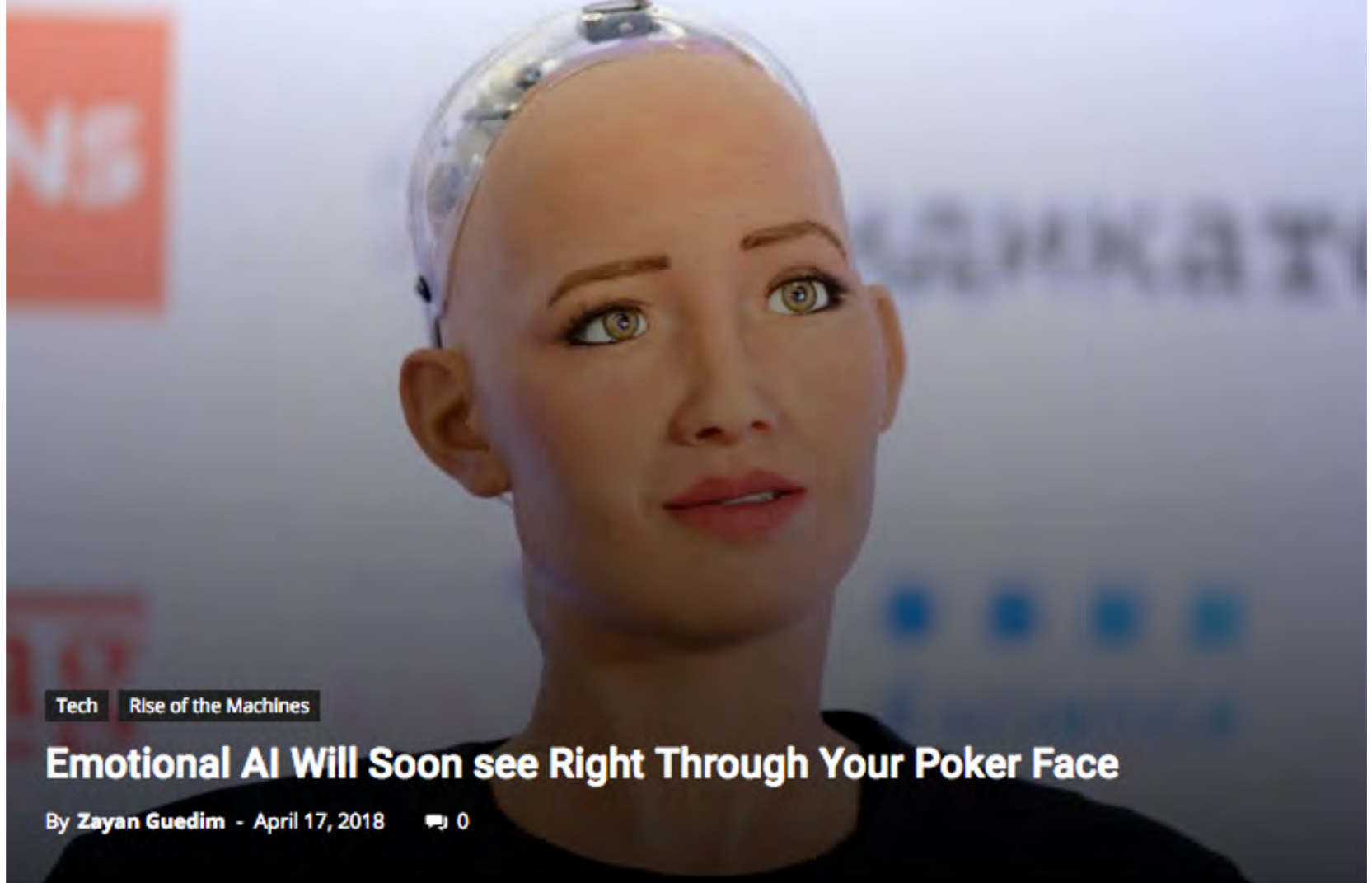
Google macht die Kamera zum Browser der realen Welt

An seiner jährlichen Entwicklerkonferenz präsentiert der Internetkonzern bemerkenswerte Innovationen. Deren Preis sind noch mehr Nutzerdaten.

Marie-Astrid Langer, Mountain View
10.5.2018, 09:40 Uhr



Der Google-CEO Sundar Pichai wird an der Entwicklerkonferenz in Mountain View, Kalifornien, wie ein Pop-Star empfangen. (Bild: Reuters / Stephen Lam)



Tech Rise of the Machines

Emotional AI Will Soon see Right Through Your Poker Face

By Zayan Guedim - April 17, 2018 0



24



24

SHARES

Beyond current facial recognition systems, intelligent, emotional AI will soon be able to detect, recognize, and track your inner state.

New Sensor Monitors Heartbeat From a Distance

By Stephanie Pappas, Live Science Contributor | July 6, 2010 08:28am ET



A new electronic sensor can remotely detect the beat of a human heart from up to 3 feet (1 meter away).



The sensor, developed by researchers at the University of Sussex Innovation Centre, can also detect brain waves from a tenth of an inch (3 millimeters) away from the skull. Researchers hope the technology, called an Electric Potential Sensor, can be used to monitor home healthcare patients remotely, without the need for doctor's appointments or invasive tests. [Read "[7 High-Tech Helpers to Get Fit](#)."]

MORE ▼

"It's a little bit like the old Star Trek technology, where they kind of wave something over your skin and take your heartbeat," said Peter Lane, an innovation support advisor at the Sussex Innovation Centre.

Demonstration of long-distance hazard-free wearable EEG monitoring system using mobile phone visible light communication

VEGA PRADANA RACHIM, YUBING JIANG, HYEON-SEOK LEE AND WAN-YOUNG CHUNG*

Department of Electronic Engineering, Pukyong National University, Busan 48513, South Korea

**wychung@pknu.ac.kr*

Abstract: A wearable electroencephalogram (EEG) is a small mobile device used for long-term brain monitoring systems. Applications of these systems include fatigue monitoring, mental/emotional monitoring, and brain-computer interfaces. However, the usage of wireless wearable EEG systems is limited due to the risks posed by the wireless RF communication radiation in a long-term exposure to the human brain. A novel microwave radiation-free system was developed by integrating visible light communication technology into a wearable EEG device. In this work, we investigated the system's performance in transmitting EEG data at different illuminance level and proposed an algorithm that functions at low illuminance levels for increased transmission distance. Using a 30 Hz smartphone camera, the proposed system was able to transmit 2.4 kbps of error-free EEG data up to 4 meter, which is equal to ~300 lux using an aspheric focus lens.

Digital Doubles

education level

estimated net
worth

types of recent
purchases

investments

habits (like
smoking &
gambling)



number of kids

contact info

religious & political
views

marital status

mortgage amount

salary

Google CEO: "We Know Where You Are. We Know Where You've Been. We Can More Or Less Know What You're Thinking About."

Nick Saint

🕒 Oct. 4, 2010, 9:47 AM 🔥 14,815



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TWITTER



GOOG Alphas Non Vtg Rg-C

▲ 1,031.79

27.23 (+2.70 %)

[Get real-time GOOG charts here »](#)

[Disclaimer](#)

Google CEO Eric Schmidt really has a knack for expressing relatively benign ideas in a way that makes him and his company look incredibly creepy.

The Atlantic [has posted](#) video of the full interview in which Eric talked about 'the creepy line', and it is chock full of unsettling sound bytes. In particular, he had the following to say on privacy:

With your permission, you give us more information about you, about your friends, and we can improve the quality of our searches. We don't need you to type at all. We know where you are. We know where you've been. We can more or less know what you're thinking about.

CIA Director Gus Hunt

“It is really very nearly within our grasp to be able to compute on all human generated information,” Hunt said.

“You’re already a walking sensor platform,” he said, noting that mobiles, smartphones and iPads come with cameras, accelerometers, light detectors and geolocation capabilities.

http://www.huffingtonpost.com/2013/03/20/cia-gus-hunt-big-data_n_2917842.html

A NEW WORLD

A new currency

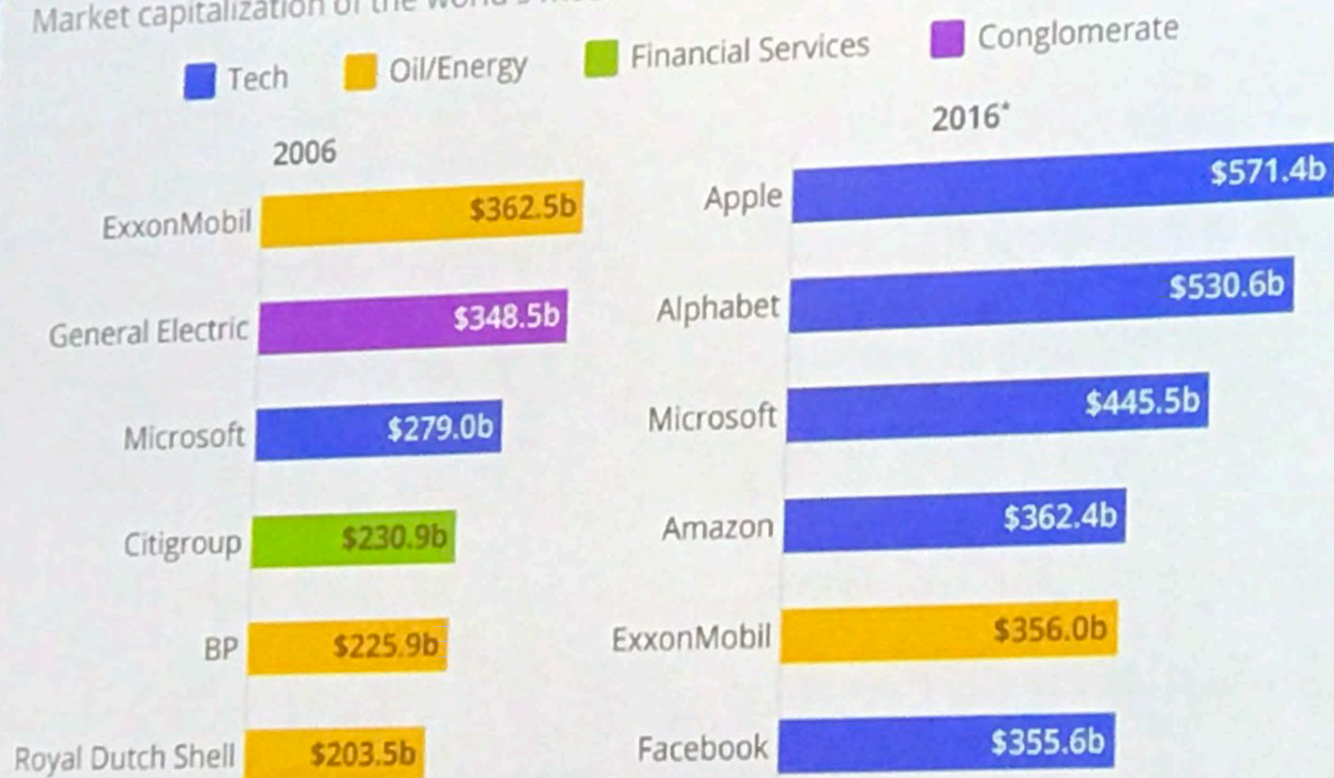
“Data is the new oil” – Clive Humby



Data really is the new oil

The Age of Tech

Market capitalization of the world's most valuable public companies



A new economy

Attention Economy



A new legal system

»»Code is law.««*

*** AND LAW ENFORCEMENT IS
INCREASINGLY BEING ENCODED**



Lawrence Lessig

CODE, VERSION 2.0 (2006)

That holds true for governments as well: Not only is code law, as Lessig famously put it – increasingly, law enforcement is being encoded, offloaded into software and the infrastructure it operates on.

Acht Superreiche besitzen angeblich so viel wie die halbe Menschheit

Die globale soziale Ungleichheit ist laut einer Oxfam-Studie offenkundiger als je zuvor: Demnach besitzen die acht reichsten Männer der Welt 426 Milliarden Dollar - und damit mehr als die gesamte ärmere Hälfte der Weltbevölkerung.



Von *Nicolai Kwasniewski* ✓



A new political system

Google will den Staat neu programmieren

Hat man Entscheidungsschwierigkeiten, kann man im Notfall natürlich auch zum Würfel greifen. Doch wie wäre es, wenn Politiker nach Googles Algorithmen entschieden? Der Konzern probiert es in Amerika aus.

14.10.2015, von ADRIAN LOBE



Could Society Be Run Like A Giant Machine?



Diese Firma weiss, was Sie denken

Cambridge Analytica kann mit einer neuen Methode Menschen anhand ihrer Facebook-Profile minutiös analysieren. Und verhalf so Donald Trump mit zum Sieg.



Alexander Nix erklärt die Methode seiner Firma (Quelle: Youtube/Concordia).

Am 9. November gegen 8.30 Uhr erwacht Michal Kosinski in Zürich im Hotel Sunnehus. Der 34-jährige Forscher ist für einen Vortrag am Risikocenter der ETH angereist, zu einer Tagung über die Gefahren von Big Data und des sogenannten digitalen Umsturzes. Solche Vorträge hält Kosinski ständig, überall auf der Welt. Er ist ein führender Experte für Psychometrik, einen datengetriebenen Nebenzweig der Psychologie. Als er an diesem Morgen den Fernseher einschaltet, sieht er, dass die Bombe geplatzt ist: Entgegen den Hochrechnungen aller führenden Statistiker ist Donald J. Trump gewählt worden.

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Veranstaltungskalender, Ne



Hunger?
Finde hier Restaurants in de



sich-erinnern.ch
Das Trauerportal von Tages-

Artikel zum Thema

«Cambridge Analytica ble jeden Beweis schuldig»

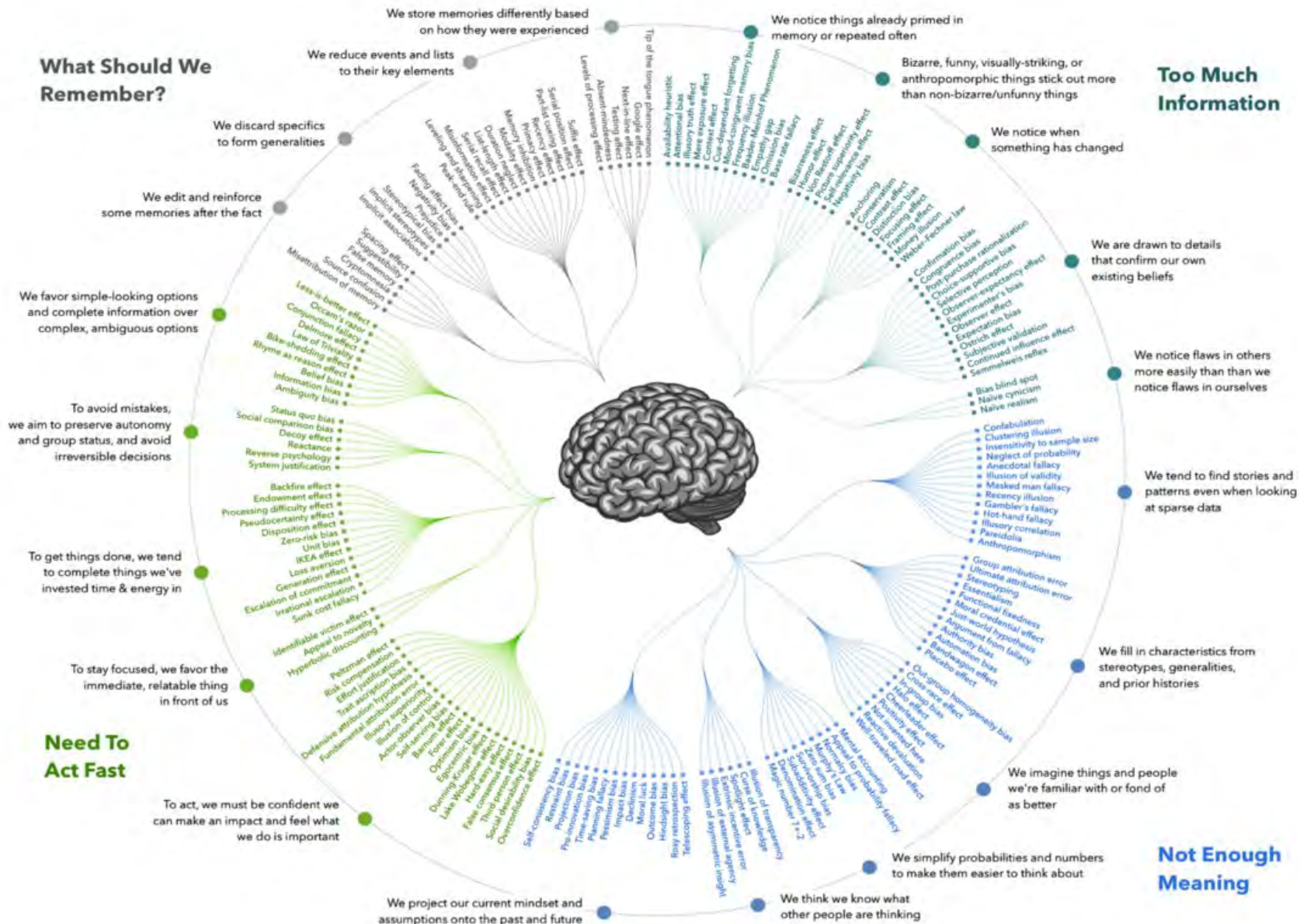


“Bald kann sein Modell anhand von zehn Facebooks-Likes eine Person besser einschätzen als ein durchschnittlicher Arbeitskollege. 70 Likes reichen, um die Menschenkenntnis eines Freundes zu überbieten, 150 um die der Eltern, mit 300 Likes kann die Maschine das Verhalten einer Person eindeutiger vorhersagen als deren Partner. Und mit noch mehr Likes lässt sich sogar übertreffen, was Menschen von sich selber zu wissen glauben.”

Manipulation of the Choices of People by Personalized Information



COGNITIVE BIAS CODEX

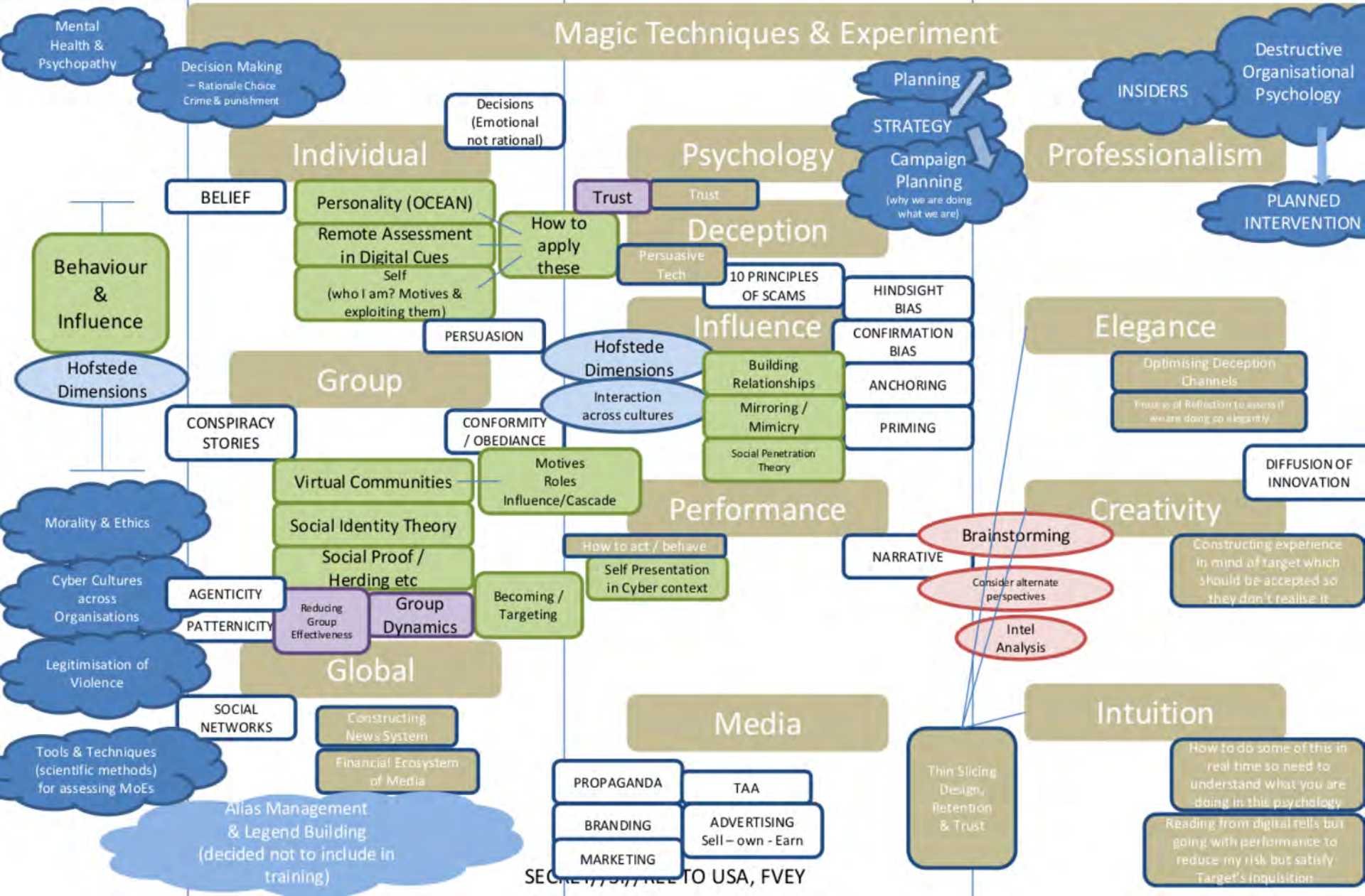


ACNO Key Skill Strands

Online HUMINT

Influence & Info Ops

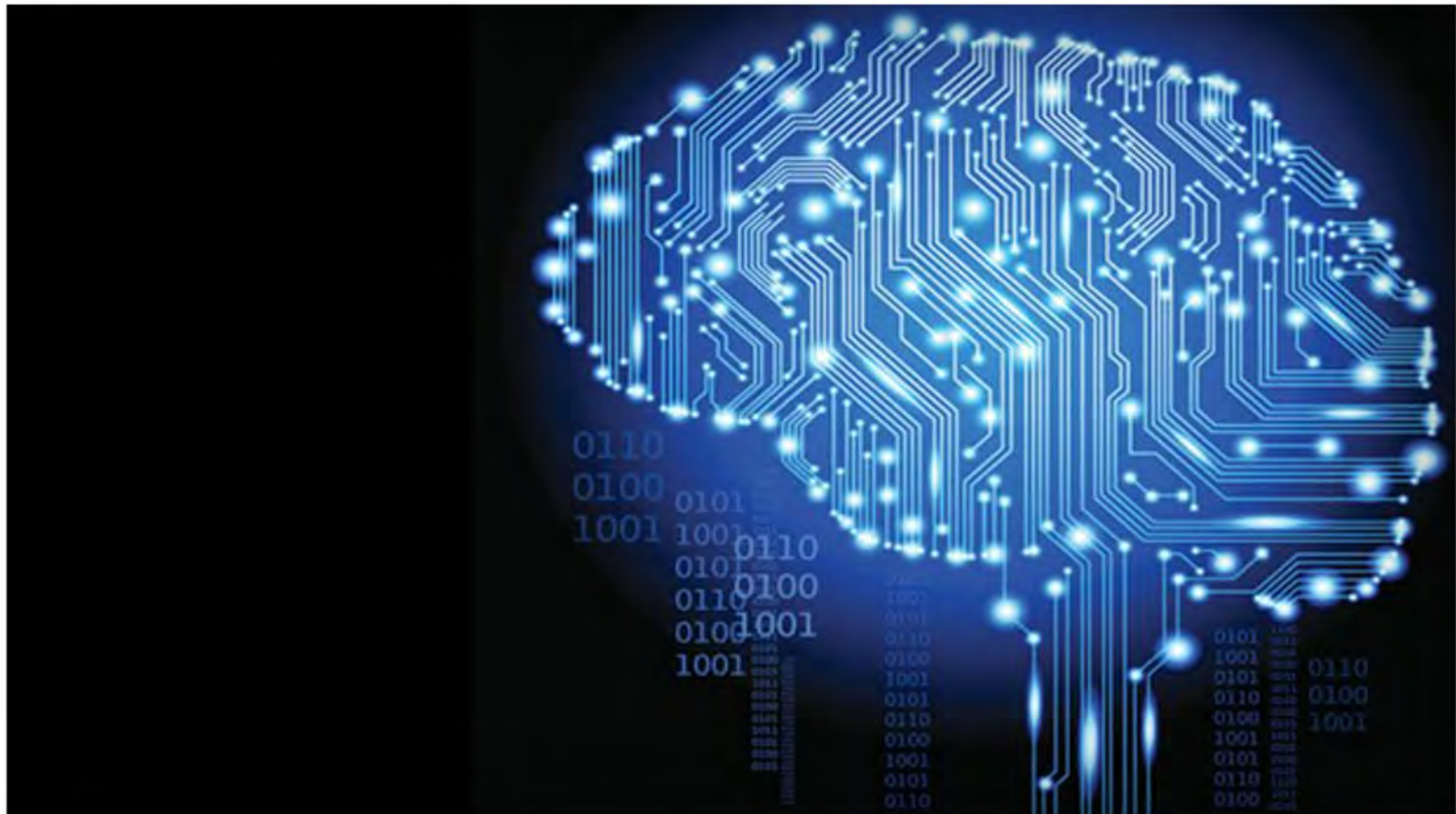
Disruption & Comp Net Attack



Meet the weaponized propaganda AI that knows you better than you know yourself

By Jessica Hall on March 1, 2017 at 8:42 am | [0 Comments](#)

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Tristan Harris: Mass Mind Control



How a handful of tech companies control billions of minds every day | Tristan Harris

258,580 views

6K 237 SHARE ...

THOMAS R. KÖHLER

DER PROGRAMMIERTE MENSCH

WIE UNS INTERNET UND
SMARTPHONE MANIPULIEREN

Kai Schlieter



DIE HERRSCHAFTS FORMEL

Wie Künstliche Intelligenz
uns berechnet, steuert
und unser Leben verändert

WESTEND

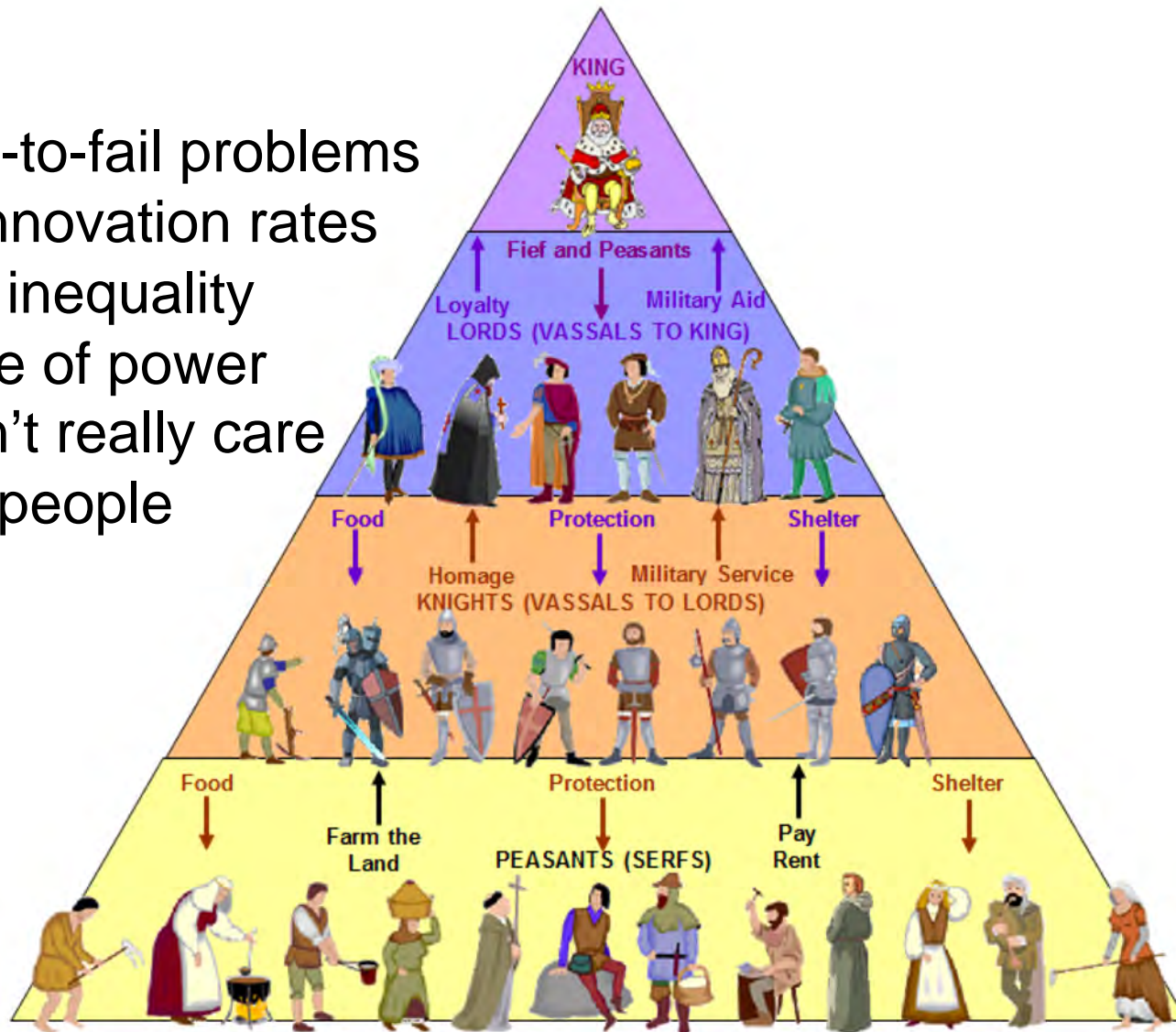
Fascism 2.0: Big Brother, Brave New World



- Top-down decision-making
- Average behavior sets the norm
- Government determines value of people
- Discrimination of minorities, euthanasia, war

Feudalism 2.0: Big Other (Surveillance Capitalism)

- To-big-to-fail problems
- Low innovation rates
- Large inequality
- Misuse of power
- Doesn't really care about people



Communism 2.0: Big Mother, Benevolent Dictator



- Top-down planning
- Goals set by the government
- Redistribution of wealth
- Scarce resources rationed

Big data, meet Big Brother

China invents the digital totalitarian state

The worrying implications of its social-credit project



Technologischer Totalitarismus

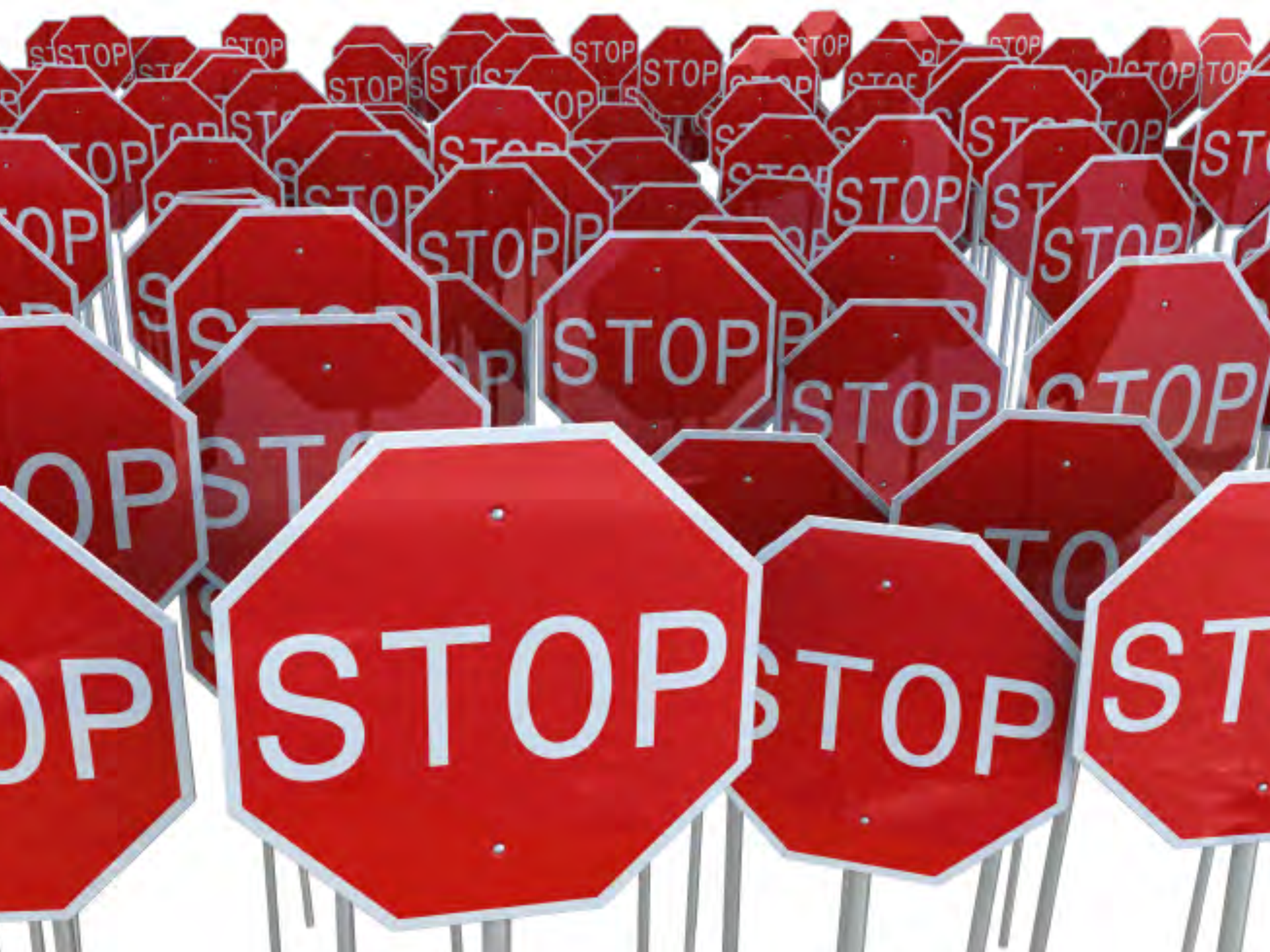
Eine Debatte

Herausgegeben von

Frank Schirrmacher

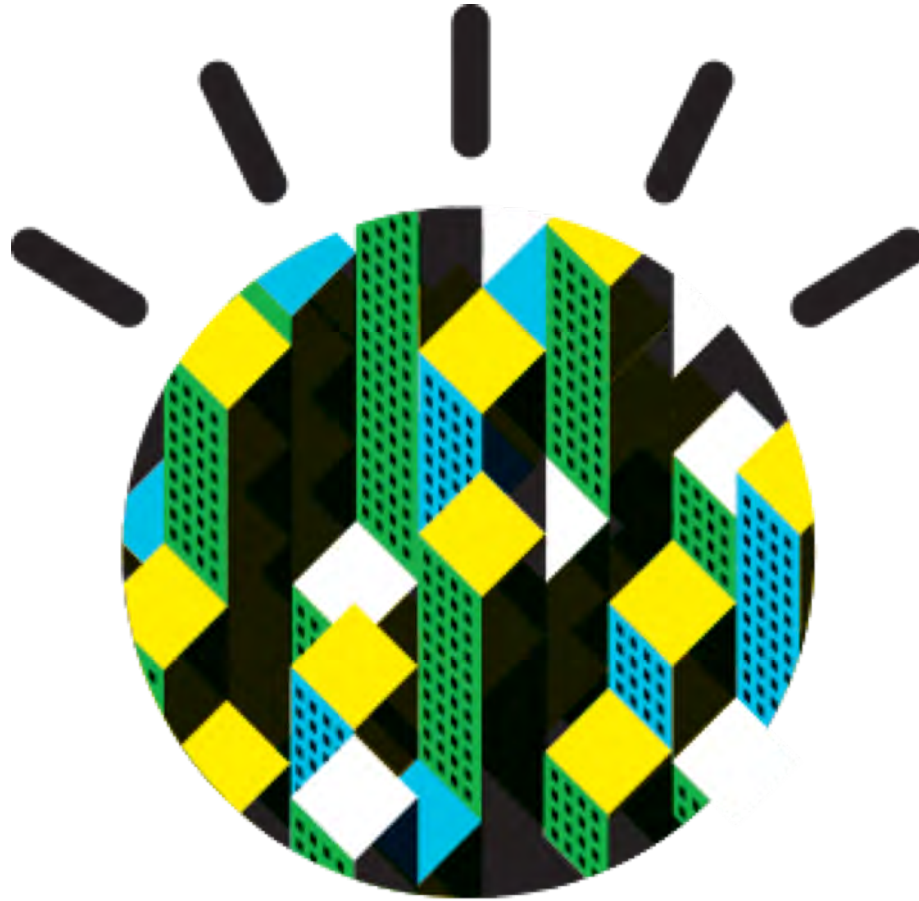
edition suhrkamp





It does not work well!

Automated Smart Cities, Smart Nations?



Googles smarte Stadt, ein digitaler Alptraum

Von Henryk M. Broder | Stand: 28.10.2017 | Lesedauer: 3 Minuten



Quelle: Getty Images/Ikon Images

Google will in Toronto ein voll vernetztes Testfeld für das Leben von morgen errichten: Eine Stadt vom Reißbrett, total vernetzt und überwacht wie eine moderne Justizvollzugsanstalt. Unserem Autor gruselt es.



ENERGY

What 4 Million Solar Panels Look Like from Space

February 23, 2017 — Brian Kahn and Climate Central

VX Nerve Agent in North Korean's Murder: How Does It Work?

February 24, 2017 — David Bradley and ChemistryWorld



POLICY & ETHICS

Will Democracy Survive Big Data and Artificial Intelligence?

ARTS & CULTURE

Why Is It Significant That the White House Tours Resume?

11 hours ago — Krystal D'Costa

ARTS & CULTURE

Readers Respond to the November 2016 Issue

15 hours ago

EVOLUTION

Paleo Profile: Mauricio Fernández's Plesiosaur

13 hours ago — Brian Switek

EVOLUTION

Fossil Pigments Reveal the True Colors of Dinosaurs



Report

Disrupting cities through technology

Thursday 17 – Saturday 19 March 2016 | WP1449

The Cities with Highest Quality of Life Are Not in the Leading IT Nations

Mercer's 2015 Quality of Living Rankings ^[2]		
	City	Country
1	Vienna	 Austria
2	Zürich	 Switzerland
3	Auckland	 New Zealand
4	Munich	 Germany
5	Vancouver	 Canada
6	Düsseldorf	 Germany
7	Frankfurt	 Germany
8	Geneva	 Switzerland
9	Copenhagen	 Denmark
10	Sydney	 Australia

Critical Thinking

Digital Literacy and Digital Enlightenment



Aufklärung ist der Ausgang des Menschen aus seiner selbstverschuldeten Unmündigkeit. Unmündigkeit ist das Unvermögen, sich seines Verstandes ohne Leitung eines anderen zu bedienen. Selbstverschuldet ist diese Unmündigkeit, wenn die Ursache derselben nicht am Mangel des Verstandes, sondern der EntschlieÙung und des Mutes liegt, sich seiner ohne Leitung eines anderen zu bedienen. Sapere aude! Habe Mut, dich deines eigenen Verstandes zu bedienen! ist also der Wahlspruch der Aufklärung.

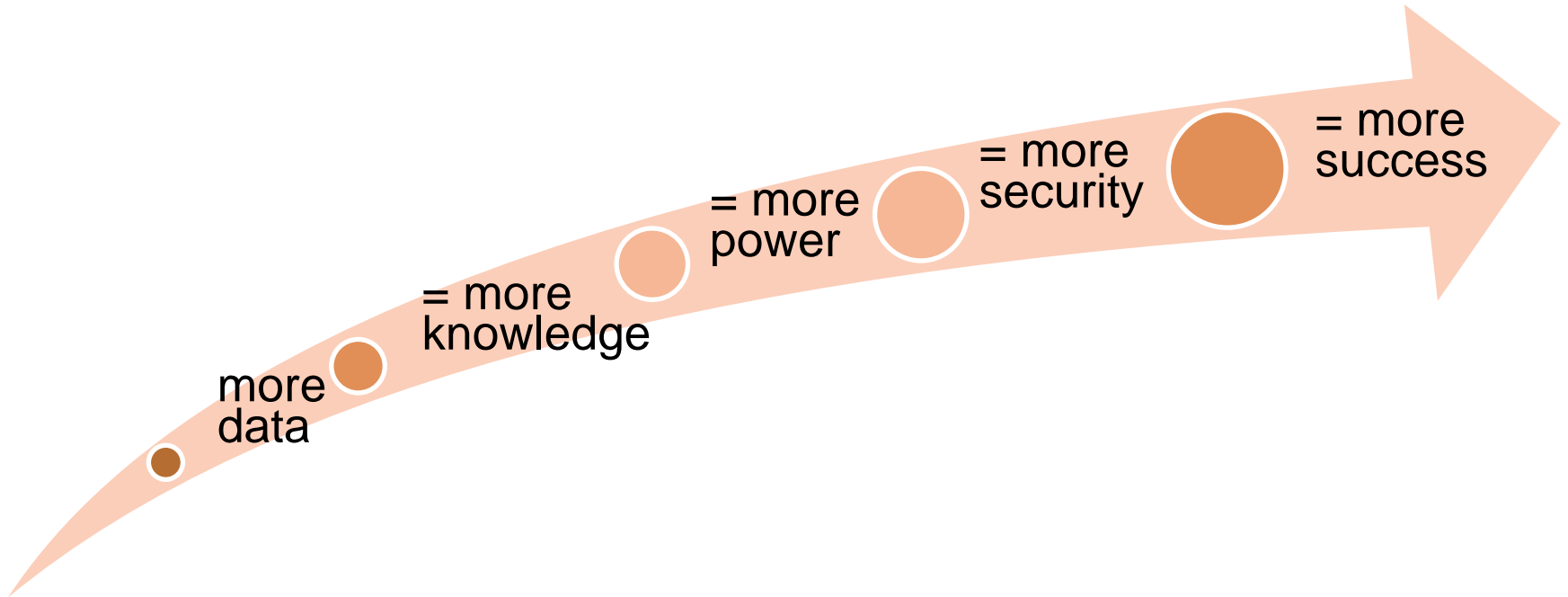
(Immanuel Kant)

What the Concept of a Data-Driven and AI-Controlled Society Lacks

- Human Dignity
- Love
- Consciousness
- Freedom
- Everything that cannot
be well quantified

More data = more
knowledge?

The Magic Formula ...



...does not work!

x = Nicolas cage films

y = swimming pool drowning

x = Divorces in Maine

y = Margarita consumption

Spurious correlations

CORRELATION DOES NOT EQUAL CAUSATION

x = cheese eating

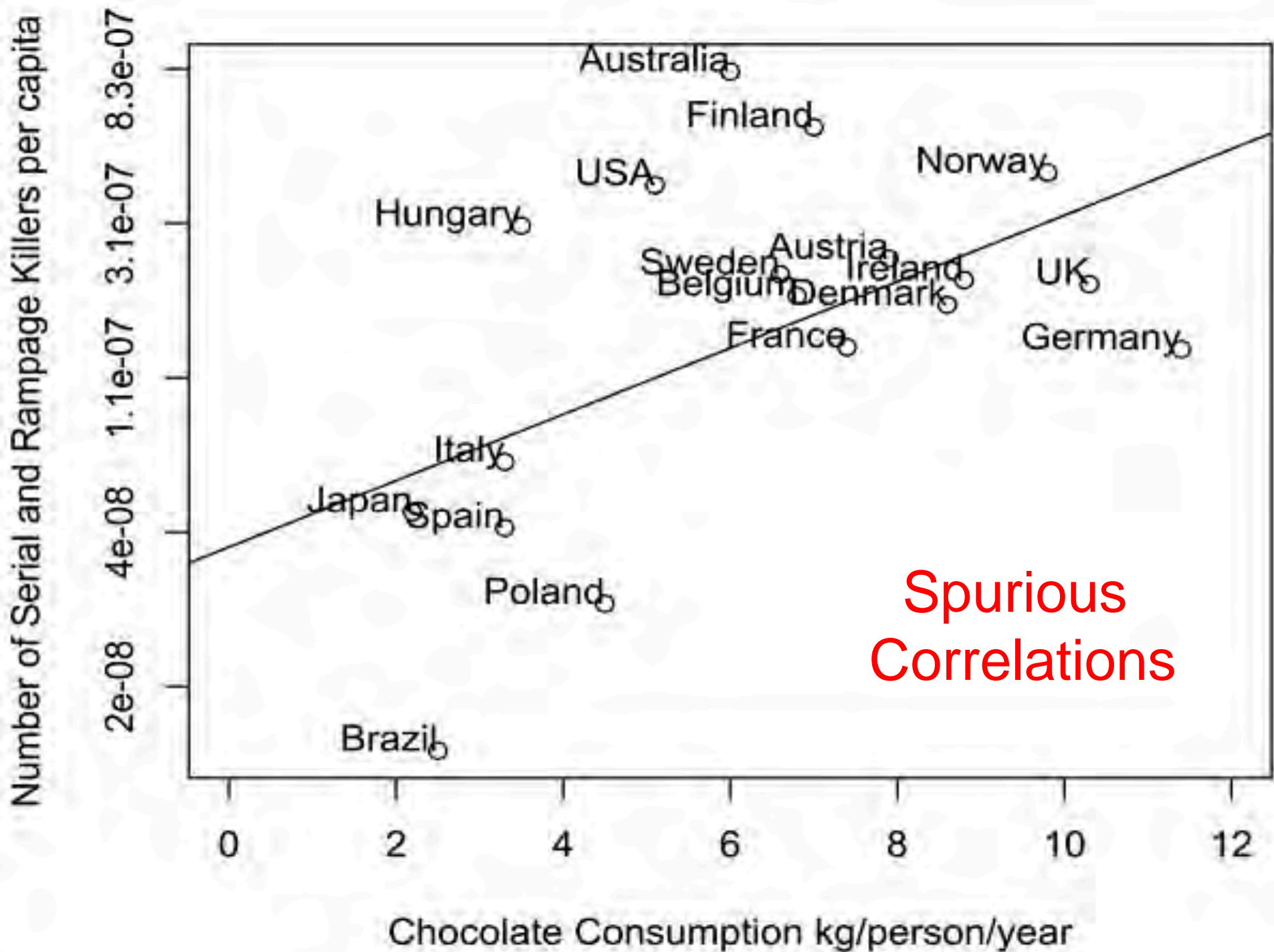
y = Fetal wire tangles

x = shark attacks

y = tornadoes

TYLER VIGEN

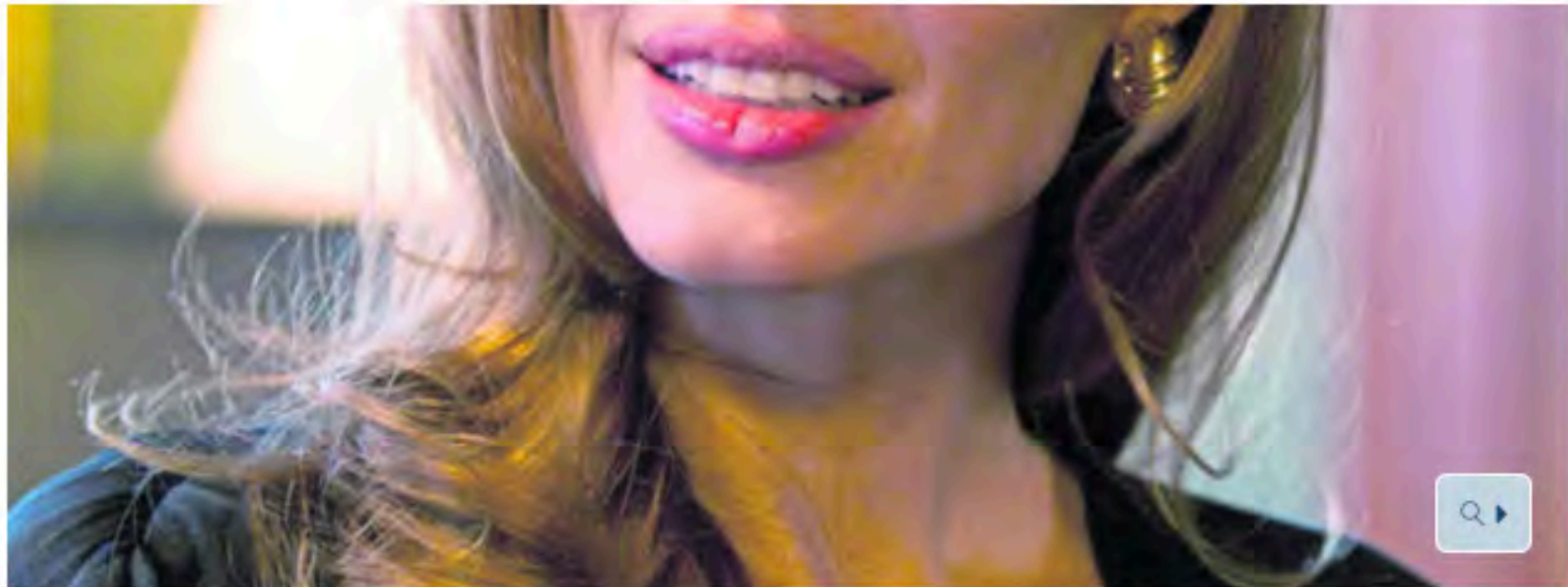








Jolie: "Wissen ist Macht"

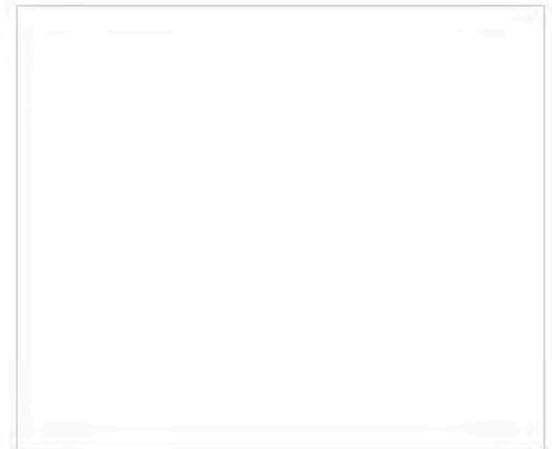
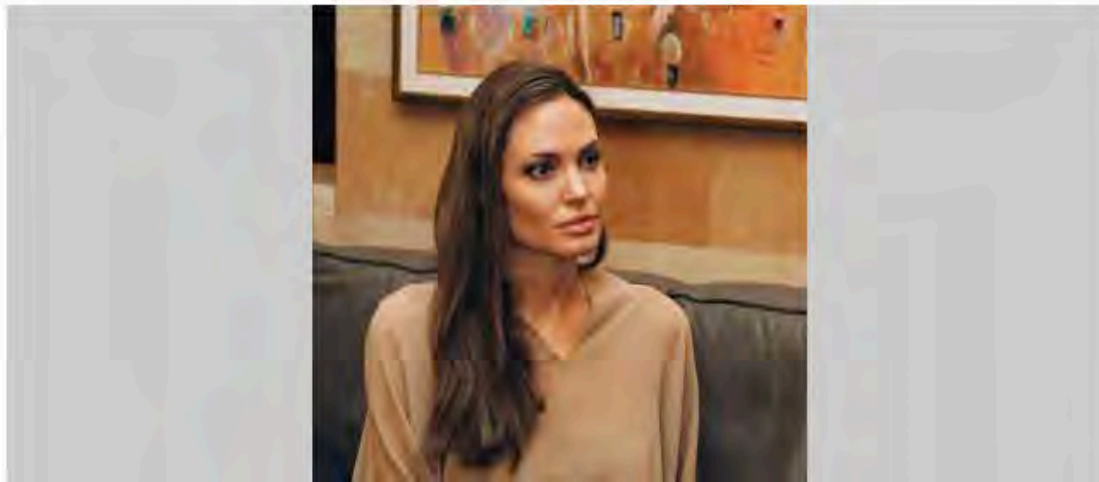


Die amerikanische Schauspielerin Angelina Jolie, mit ihrem Kollegen Brad Pitt verheiratet, will dem Krebs zuvorkommen. Deshalb ließ sich die 39-Jährige nach ihren Brüsten jetzt auch die Eierstöcke entfernen. Bei ihr wurde ein mutiertes Gen diagnostiziert, das für sie das Risiko, an Krebs zu erkranken, deutlich erhöht. Bild: dpa

Angelina Jolie über ihre Brust-Amputation

«Ich bin Trägerin eines defekten Gens»

Angelina Jolie hat eine drastische Massnahme ergriffen. Die Schauspielerin liess sich aus Angst vor Krebs beide Brüste entfernen.



Angelina Jolie lässt sich beide Brüste amputieren

Hollywood-Schauspielerin Angelina Jolie hat sich vorsorglich ihre Brüste abnehmen lassen. Grund ist ihre Angst vor einer Krebserkrankung. Schon ihre Mutter starb einst im Alter von 56 Jahren daran.

58

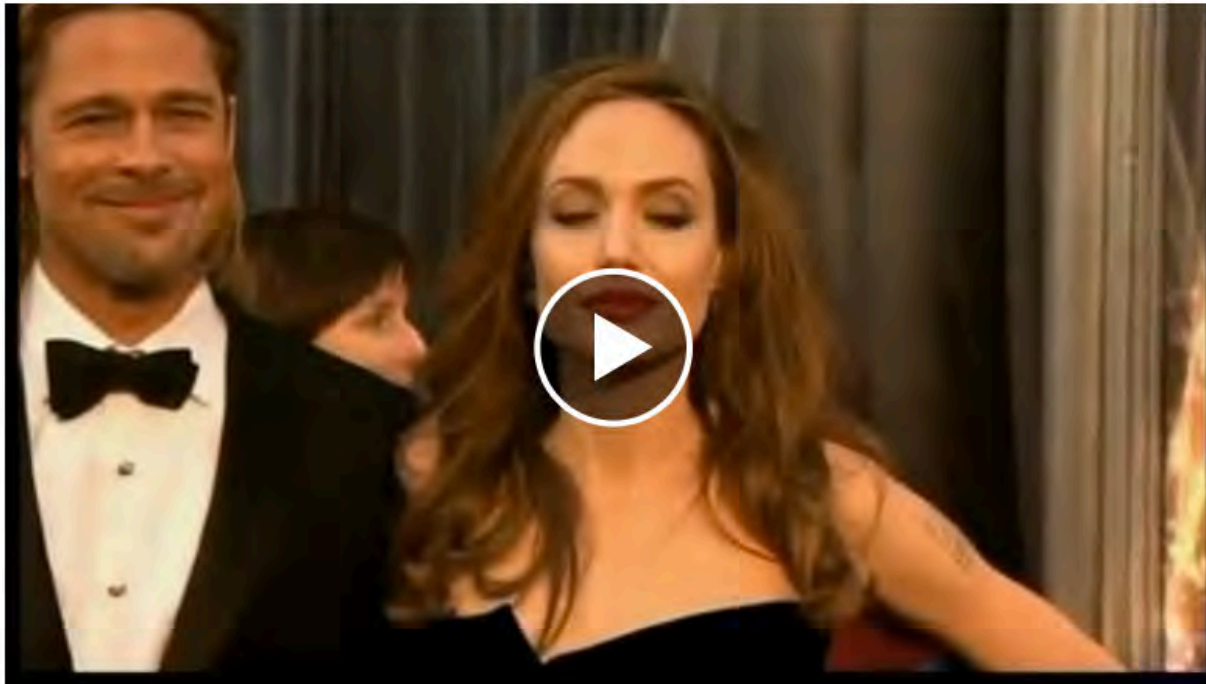


Twittern

G+1

2

Von [Caroline Stern](#)
Autorin WELT-Gruppe



Video teilen

Twittern

G+1

0

Auto Start: [an](#) | [aus](#)

Die Schauspielerin Angelina Jolie hat sich beide Brüste amputieren lassen. Das gab die Schauspielerin selbst in einem Beitrag in der "New York Times" bekannt. So wollte sie ihr Risiko minimieren.

Quelle: Reuters

Angelina Jolie taugt nicht als Vorbild

Kaum eine Frau sollte sich vorsorglich aus Angst vor Krebs die Brüste entfernen lassen. Angelina Jolies Weg ist nur für die wenigsten eine Option.

Von **Sven Stockrahm**

14. Mai 2013, 20:14 Uhr / Aktualisiert am 14. Mai 2013, 20:46 Uhr

Die Schauspielerin Angelina Jolie

Die Schauspielerin Angelina Jolie © Dan Kitwood/Getty Images

INHALT

Seite 1 — Angelina Jolie taugt nicht als Vorbild

Seite 2 — Jeder Krebs ist einzigartig

Auf einer Seite lesen ›

Angelina Jolie ist vielleicht dem Trugschluss erlegen, sie könne sich dafür entscheiden, nicht krank zu werden. Die Schauspielerin hat sich beide Brustdrüsen entfernen lassen, damit kein Tumor darin zu wuchern beginnen kann. Geblieben sind ihr Haut und Brustwarzen, die sich nun über zwei Silikonimplantate spannen. In der New York Times schreibt Jolie: "Das

Leben birgt viele Herausforderungen. Diejenigen, die uns keine Angst machen sollten, sind auch diejenigen, die wir annehmen und kontrollieren können."



Brustkrebs-Screening

Wissenschaftler zweifelt am Sinn

MÜNCHEN. Deutliche Zweifel am Nutzen von Screeningprogrammen hat der Berliner Wissenschaftler Professor Gerd Gigerenzer geäußert. Statt das Geld etwa in das Mammografiescreening zu stecken, sollte besser die Prävention gestärkt werden, erklärte der Direktor am Berliner Max-Planck-Institut für Bildungsforschung beim BKK Tag 2013 in München.



Kommentieren (0)

Von tausend Frauen, die am Mammografiescreening teilnehmen, sterben nach Gigerenzers Angaben vier an Brustkrebs, gegenüber fünf Frauen, die nicht zum Screening gehen.

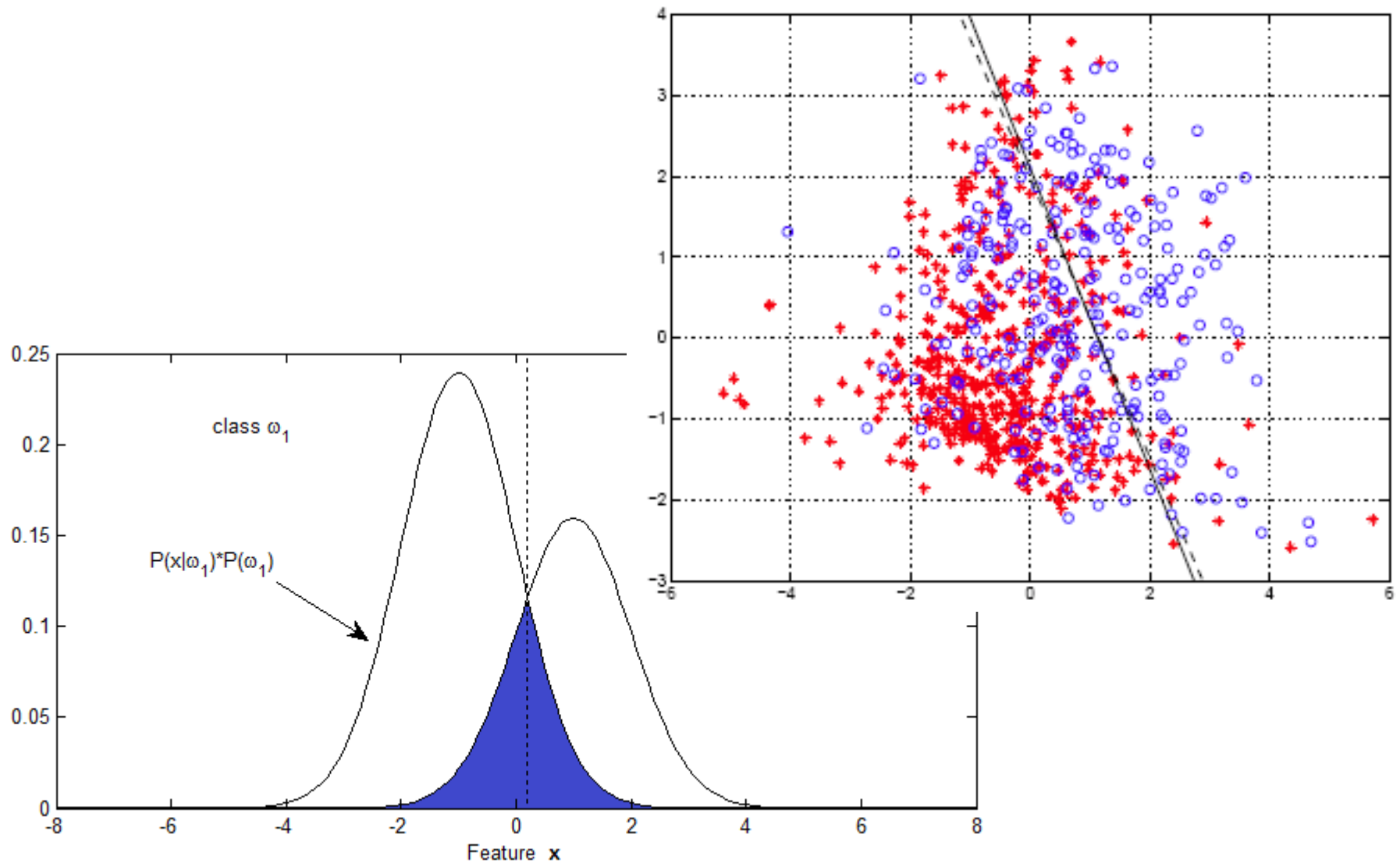
Dieser Unterschied werde dann für Aussagen genutzt, wonach ein Screening die Brustkrebsmortalität um 20 Prozent senkt. Damit würden die Frauen in die Irre geführt, da sich im Einzelfall das Risiko an Brustkrebs zu sterben durch eine Nicht-Teilnahme kaum erhöhe, erklärte Gigerenzer.

Außerdem müsse berücksichtigt werden, dass Brustkrebsscreenings zu Fehlalarmen und überflüssigen Eingriffen führten.

In der Bevölkerung und auch in der Ärzteschaft werde der Nutzen der Mammografie als ein Mittel zur Vermeidung von tödlich verlaufenden Krebserkrankungen in hohem Maße überschätzt, erklärte er. Statt über relative Risiken zu informieren, sollten absolute Zahlen genannt werden.

Dann würde auch deutlich, dass Screeninguntersuchungen zur Früherkennung "so gut wie nichts" bringen. (sto)

Classification Errors Will Happen



Pseudo-objectivity is a serious problem

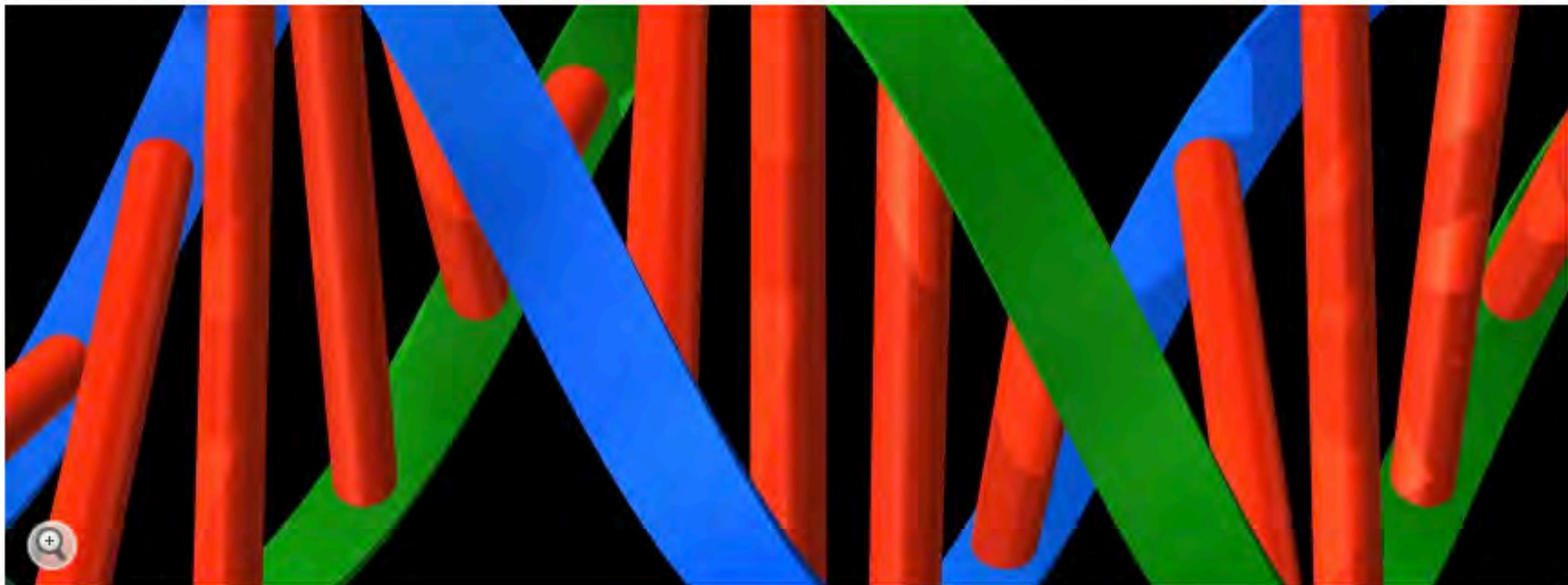


welcome
to you[®]





23andMe: US-Gesundheitsbehörde will Verkauf von Gentests stoppen



Corbis

DNA-Doppelhelix: US-Gentest-Firma analysiert das Erbgut von Kunden auf erblich bedingte Erkrankungen

Der Gentest-Firma 23andMe droht das Aus eines ihrer wichtigsten Geschäftsmodelle: Sie soll keine DNA-Tests mehr verkaufen. Dazu forderte die US-Gesundheitsbehörde FDA das Unternehmen auf. Die Begründung: Nutzen und Sicherheit seien bisher nicht belegt.

Riesige Genom-Studie deckt auf

Kerngesund trotz Gendefekten: Forscher stehen vor Rätsel um 13 Resistente

Donnerstag, 14.04.2016, 23:58

Tellen

0

G+



★★★★★

0

Fehler melden



Wissenschaftler haben die Erbgutdaten von mehr als einer halben Million Menschen auf Gendefekte untersucht.

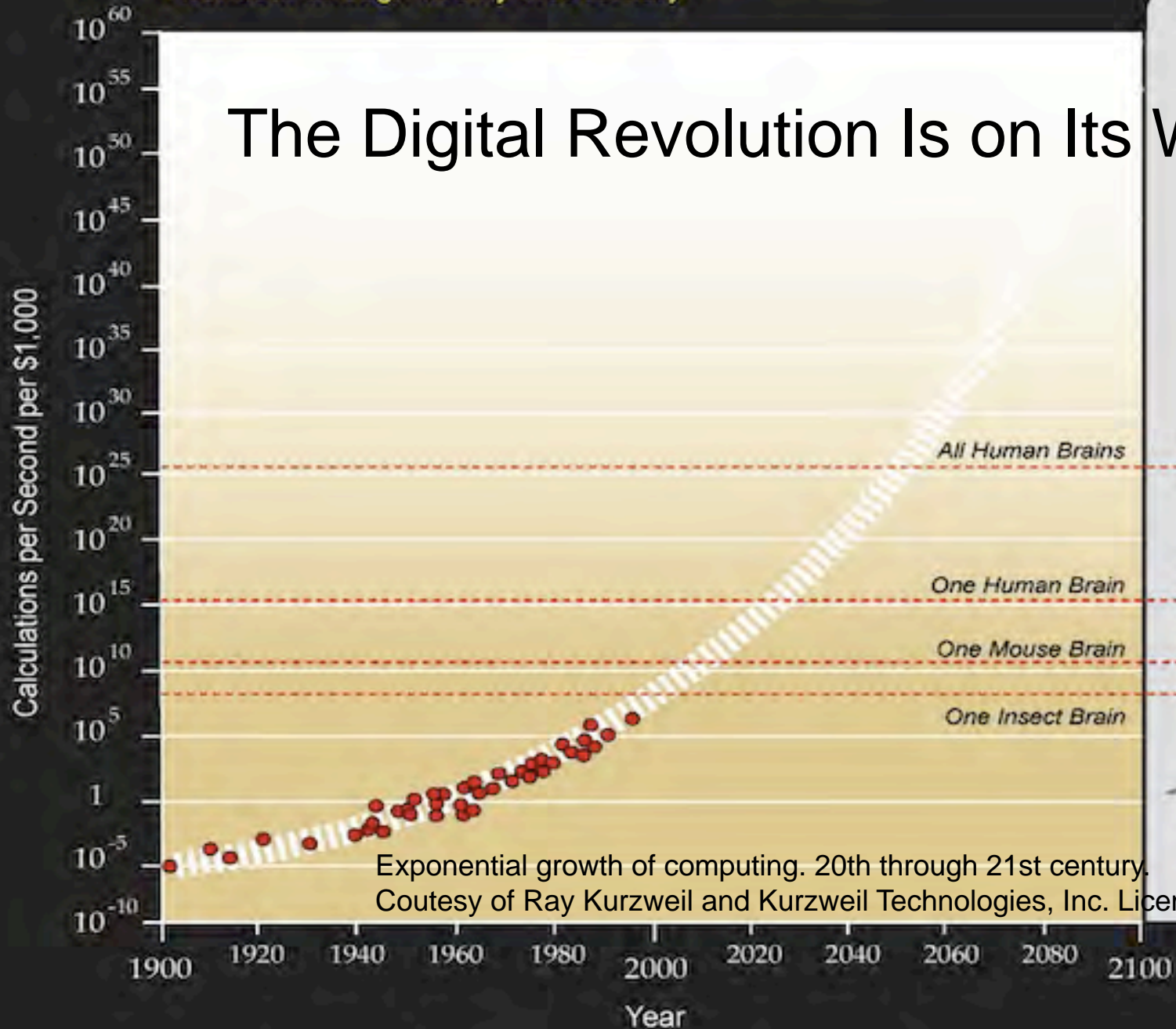
Colourbox.de

Will AI fix it?

Exponential Growth of Computing

Twentieth through twenty first century

The Digital Revolution Is on Its Way



Logarithmic Plot

All Human Brains

One Human Brain

One Mouse Brain

One Insect Brain



Better Chess Players



Better in Answering Questions?



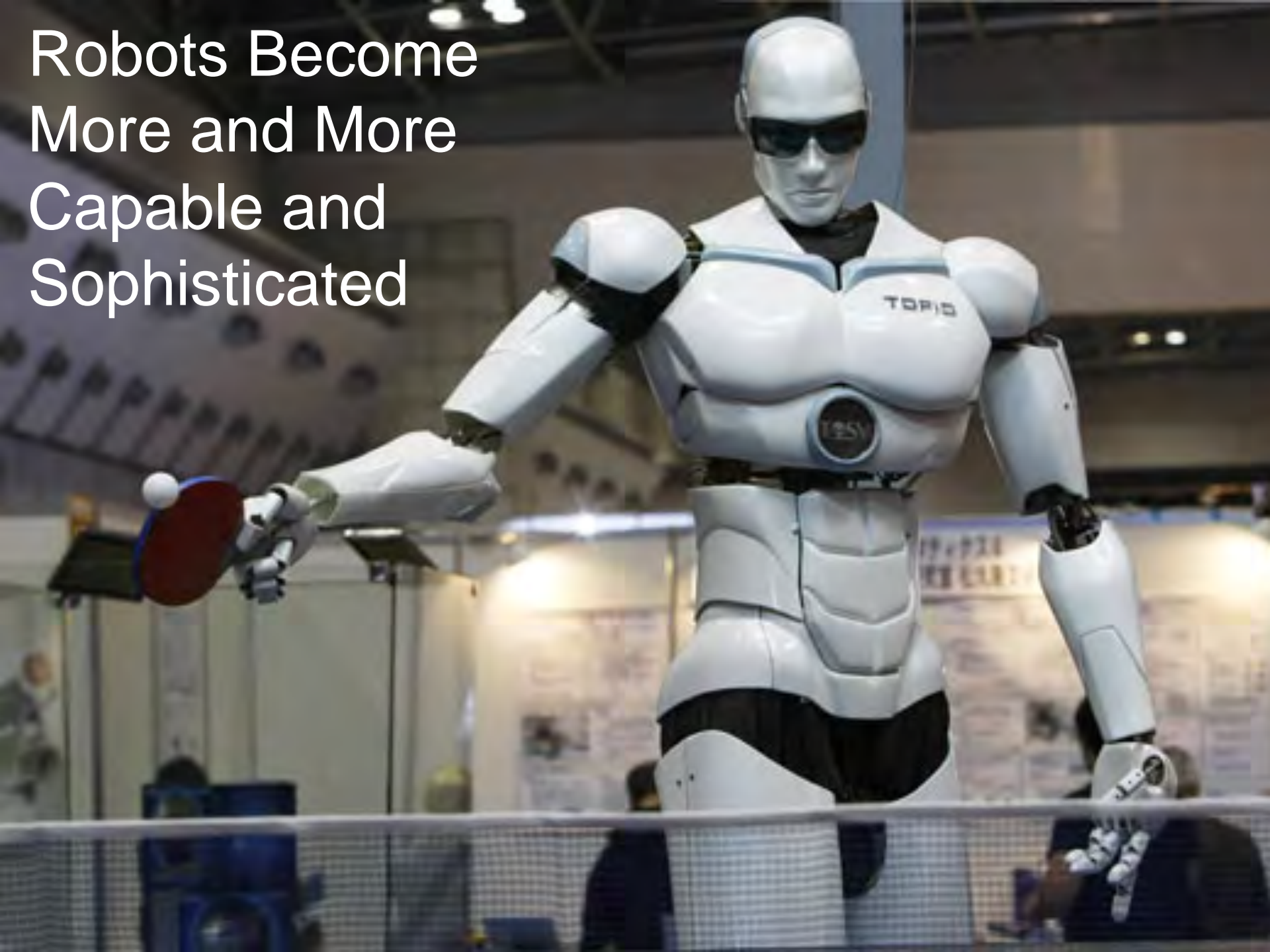


Google DeepMind Challenge Match

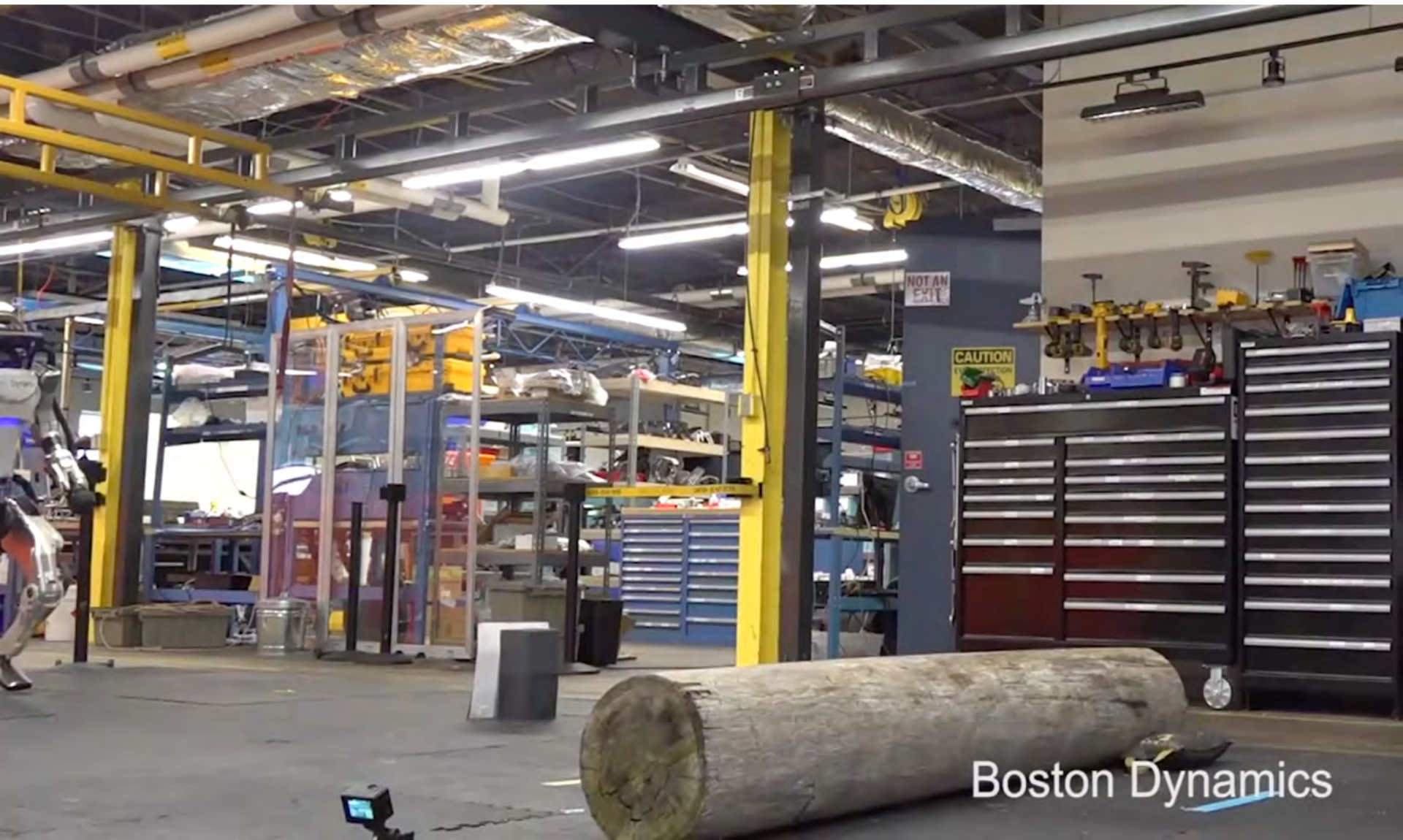
8 - 15 March 2016



Robots Become
More and More
Capable and
Sophisticated



The Official Status of Robotics



Boston Dynamics



Robots Can Learn. They May Soon
Multiply and Evolve Without Our Help!

Intelligent Machines will
be our tools,

Intelligent Machines will
be our tools,
then our “partners”,

Intelligent Machines will
be our tools,
then our “partners”,
then our coaches,

Intelligent Machines will
be our tools,
then our “partners”,
then our coaches,
then our bosses...?

Intelligent Machines will
be our tools,
then our “partners”,
then our coaches,
then our bosses...

Soon, we may need
“upgrades” to be
competitive

Elon Musk wants to link computers to our brains to prevent an existential threat to humanity



Kevin Loria



🕒 Jun. 17, 2017, 12:35 PM 🔥 26,903



FACEBOOK



LINKEDIN



TWITTER



Elon Musk is a busy guy.

He's developing [electric vehicles](#), [self-driving cars](#), [tunnel-boring infrastructure technology](#), and [re-usable rockets](#) (with the goal of getting humans to Mars).



Will We
Soon
Have
Brain
Implants
?



Unsere Nachfahren werden Maschinen sein

Der Händedruck zwischen Mensch und E. T. findet wohl niemals statt. Die Zukunft gehört anorganischen Lebensformen.

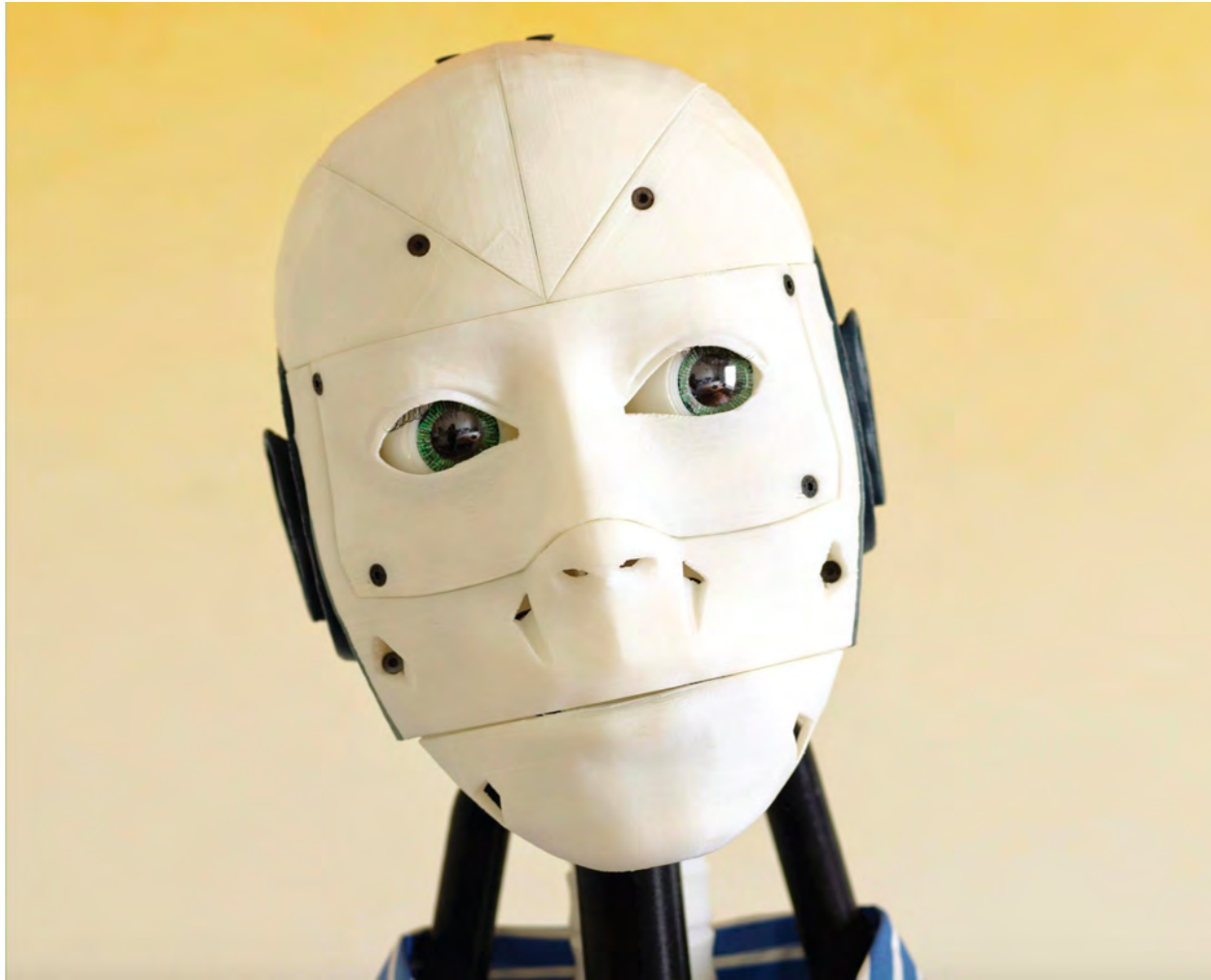
Martin J. Rees

21.10.2017, 05:30 Uhr



In der Milchstrasse gibt es Milliarden Planeten, die der Erde ähneln. (Bild: Anthony Anex / Keystone)

Jürgen Schmidhuber: «Die Geschichte wird nicht mehr von Menschen dominiert»





Master's in Artificial Intelligence (Fall 2017)

Contact:
Jürgen Schmidhuber
IDSIA, Galleria 2, 6928
Manno-Lugano, Switzerland



Master's in Artificial Intelligence (Fall 2017)

Contact:
Jürgen Schmidhuber
IDSIA, Galleria 2, 6928
Manno-Lugano, Switzerland
Fax +41 58 666666 1
Fon +41 58 666666 2
Sec +41 58 666666 6

The Dark Secret at the Heart of AI

No one really knows how the most advanced algorithms do what they do. That could be a problem.

by Will Knight April 11, 2017

L

ast year, a strange self-driving car was released onto the quiet roads of Monmouth County, New Jersey. The experimental



Supercomputer in der Medizin

Dr. Watson versagt

SPIEGEL+ Exklusiv für Abonnenten

IBM will mit Großrechnern Krankheiten behandeln, bisher mit wenig Erfolg. Von Martin U. Müller

Think twice before consulting Dr. Google, researchers say



When you seek health advice online, you may unwittingly be sharing sensitive information with third parties



Kelly Crowe · CBC News · Posted: Apr 07, 2018 9:00 AM ET | Last Updated: April 7



Forget Killer Robots— Bias Is the Real AI Danger

John Giannandrea, who leads AI at Google, is worried about intelligent systems learning human prejudices.

by Will Knight October 3, 2017

TAG

Carnegie Mellon University , Google , Algorithm , Google Algorithm , National Science Foundation , AdFisher

Study Suggests That Google Algorithms Discriminate Against Women

9 July 2015, 3:34 pm EDT By J.E. Reich Tech Times



The results of a study conducted at Carnegie Mellon University propose that Google algorithms tend to discriminate against female job-seekers. (Robert Scoble | Flickr)

Using [AdFisher](#), a tool developed at CMU that uses statistical methodology to analyze Google ads, researchers created 17,370 simulated male and female user profiles programmed only to visit jobseeker websites. The experiment was meant to be part of a larger study concerning general Google Ad settings.

However, the CMU researchers discovered that 1,000 profiles out of the 17,370 specifically configured to peruse available salaried positions, more results popped up for the male profiles that featured career coaching services for executive positions that paid \$200k or more than they did for the female-oriented profiles.

What did the ladies get instead? Run-of-the mill posting services (and strangely enough, an auto dealer).

"The male users were shown the high-paying job ads about 1,800 times, compared to female users who saw those ads about 300 times," explained Ph.D. student Amit Datta in [a press release](#) issued by the university.

In the same statement, associate professor of electrical and computer engineering/computer science Anupam Datta confessed that the mainspring for the algorithmic male preference is more difficult to trace than one might imagine, but that programs like AdFisher might be able to correct them.



Bernard Parker, left, was rated high risk; Dylan Fugett was rated low risk. (Josh Ritchie for ProPublica)

Machine Bias

There's software used across the country to predict future criminals. And it's biased against blacks.

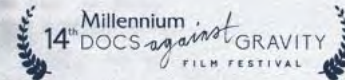
by Julia Angwin, Jeff Larson, Surya Mattu and Lauren Kirchner, ProPublica

May 23, 2016

Algorithms May Turn Correlations into Causal Relationships

WE KNOW YOU WILL
COMMIT A CRIME.

YOU JUST DON'T
KNOW IT YET.



PRE-CRIME

a film by MONIKA HIELSCHER & MATTHIAS HEEDER

Kloos & Co.
Medien GmbH

WDR arte

Filmförderung Hamburg
Schleswig-Holstein

FFA

DEUTSCHER
FILMFÖRDERFONDS

MDM
Medienförderung
Medienförderung

MEDIA
EUROPE LOVES CINEMA

german
films

RISE AND SHINE
WORLD SALES

THE PERFECT STORM



JEREMY RIFKIN

THE END OF WORK

The Decline of the Global Labor Force
and the Dawn of the Post-Market Era

FORWARD BY ROBERT A. KILLGORE

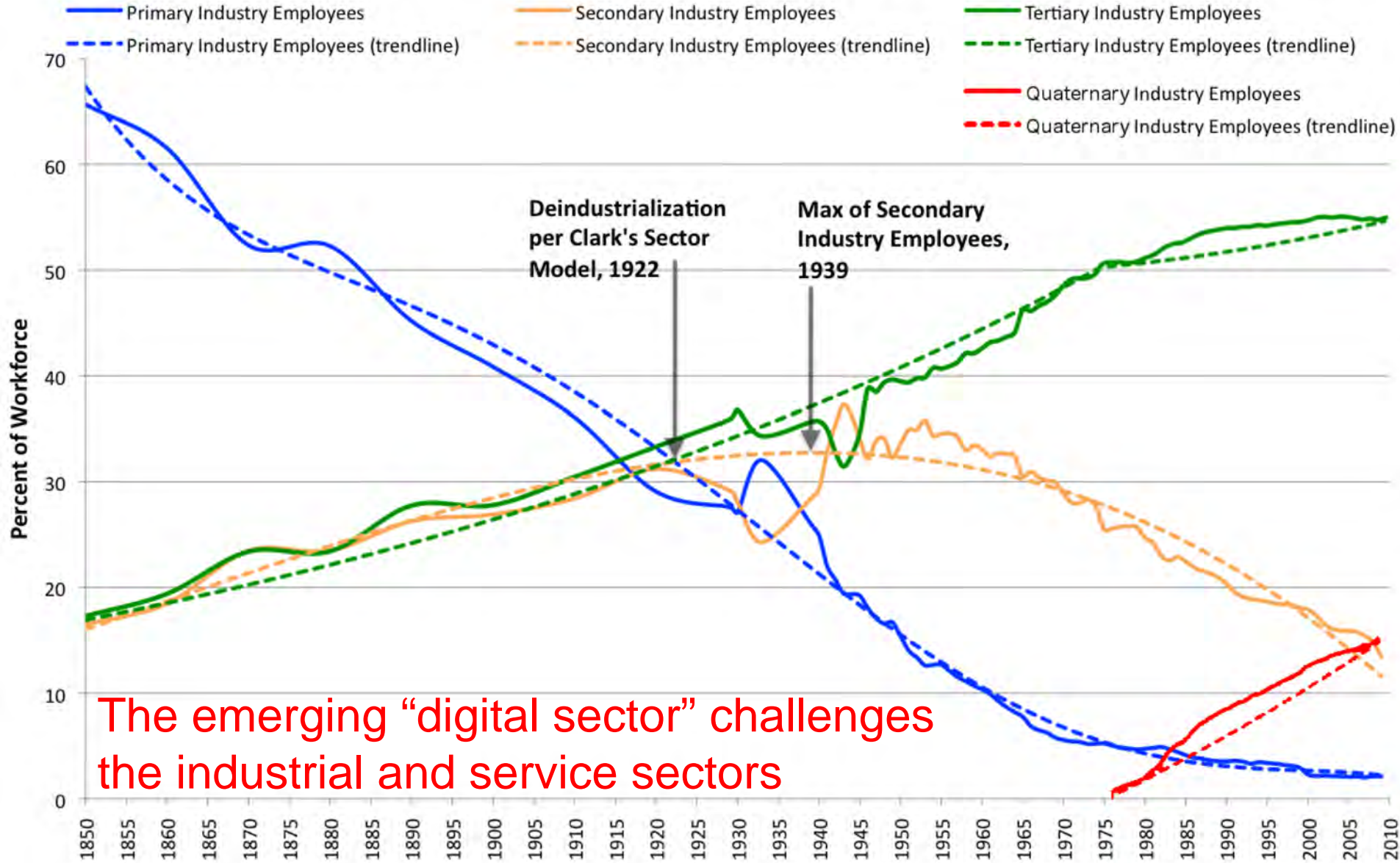
CONSTANCE KURZ
FRANK RIEGER

ARBEITSFREI

EINE ENTDECKUNGSREISE
ZU DEN MASCHINEN,
DIE UNS ERSETZEN

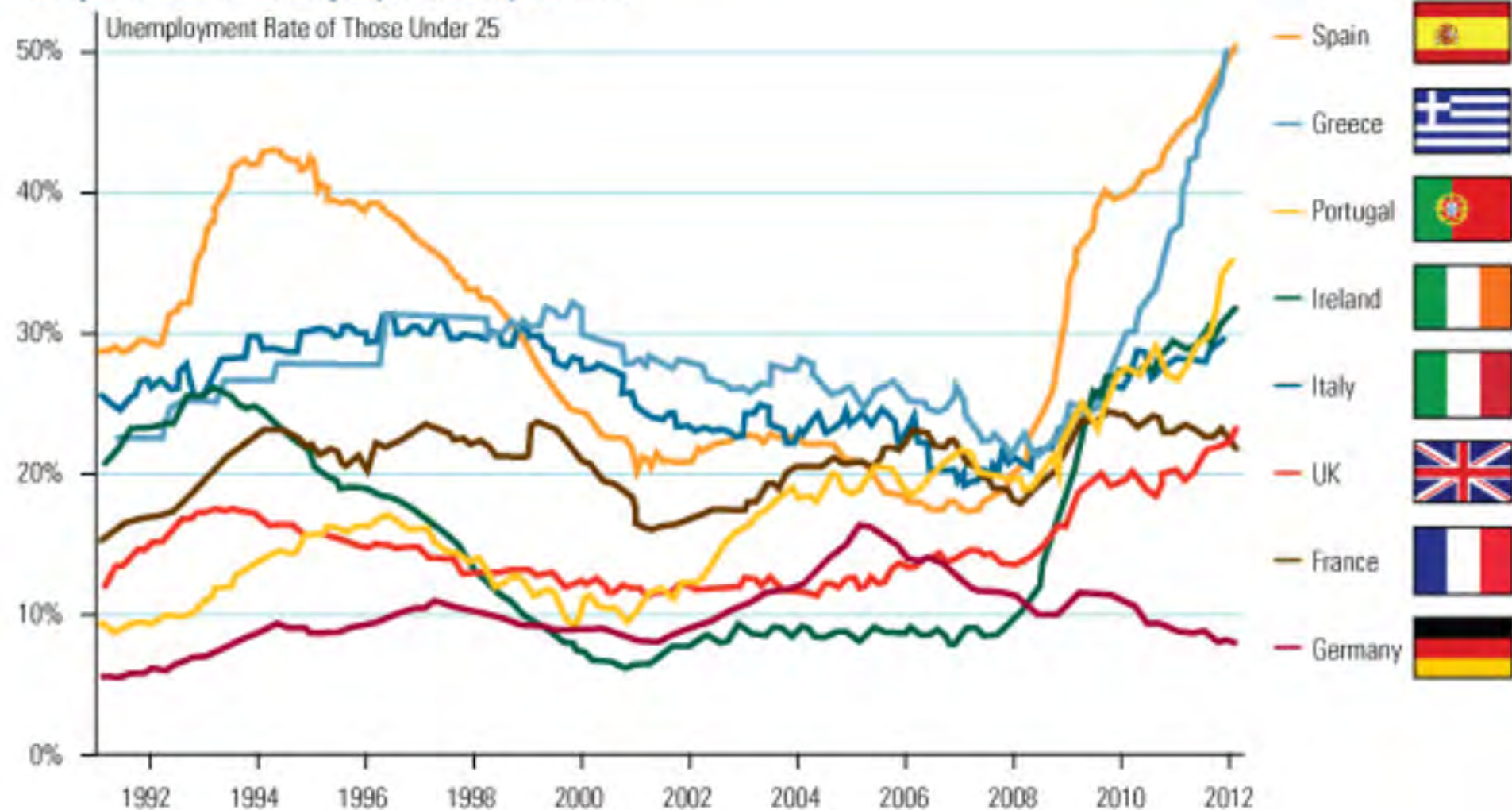
R
RIEMANN
VERLAG

The Economy 4.0 Is Born



A Massive Loss of Jobs Is Already Happening

European Youth Unemployment Skyrockets



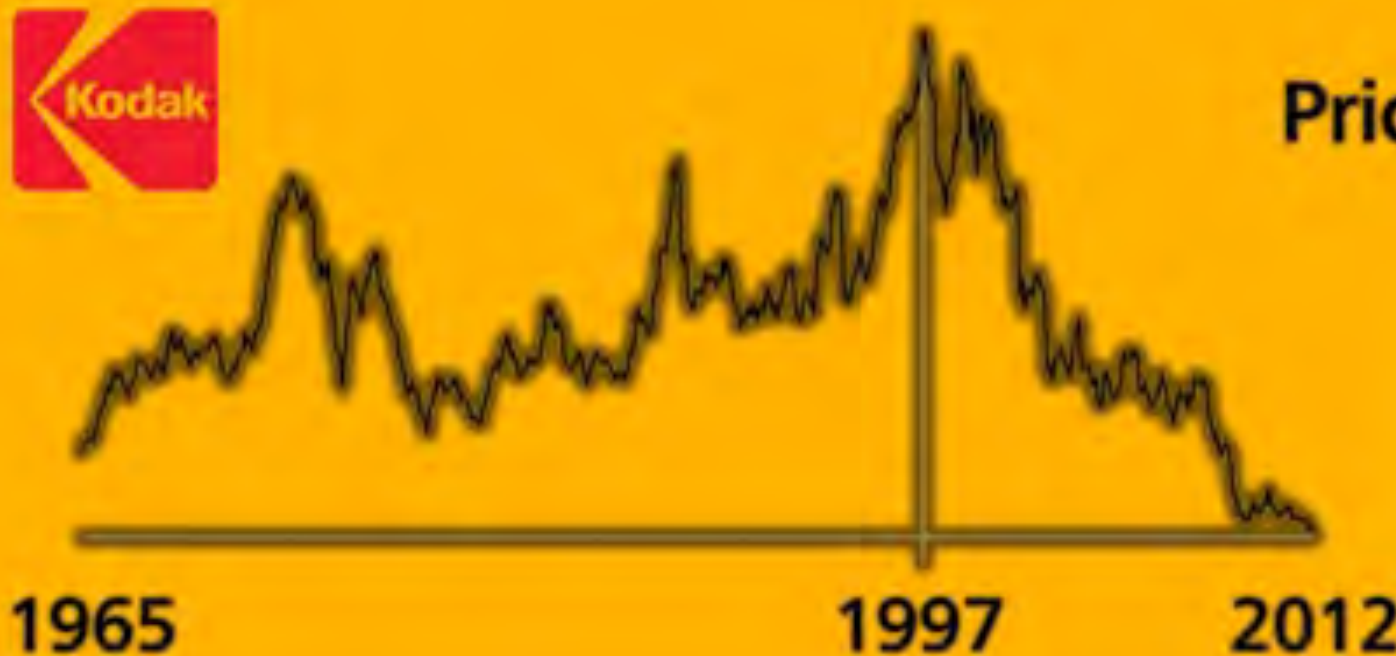
Source: Thomson Reuters Datastream, Eurostat
Reuters graphic/Scott Barber 4/2/2012



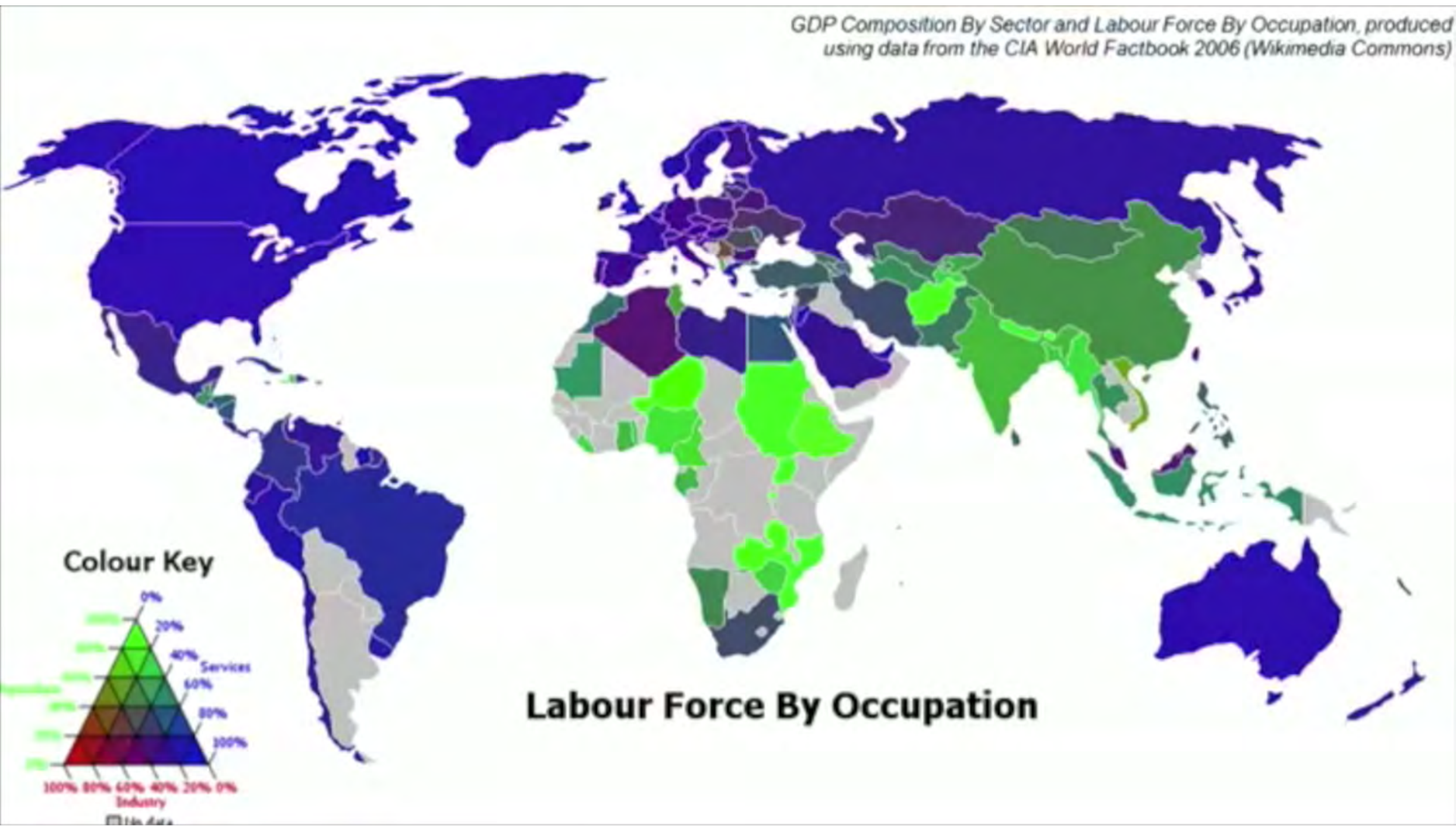
40% of
Today's
Top 500
Companies
Will Be Gone
in 10 Years



Price per share



Jeremy Howard on Learning Computers



Steve Wozniak on Artificial Intelligence

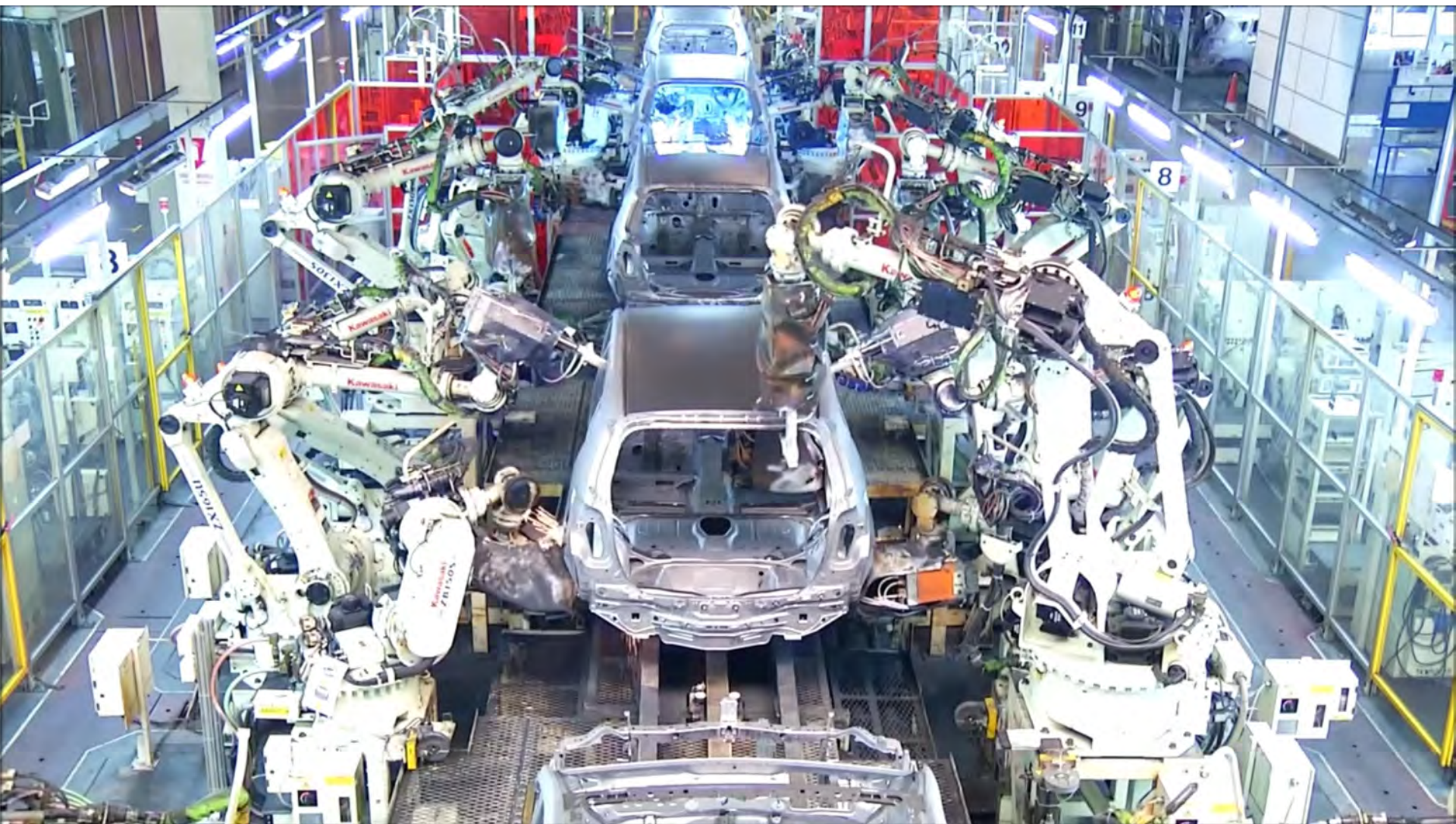
"Computers are going to take over from humans, no question ...

Like people including Stephen Hawking and Elon Musk have predicted, I agree that the future is scary and very bad for people ...

If we build these devices to take care of everything for us, eventually they'll think faster than us and they'll get rid of the slow humans to run companies more efficiently ...

Will we be the gods? Will we be the family pets? Or will we be ants that get stepped on? I don't know ..."

Better Workers



Better Doctors?



Da Vinci Surgical System



The robot lawyers are here - and they're winning



Rory Cellan-Jones

Technology correspondent

@BBCRoryCJ

🕒 1 November 2017



 Share



Would you take orders from a ROBOT?

An artificial intelligence becomes the world's first company director

- Robot was appointed by Hong-Kong venture capital firm Deep Knowledge
- The robot, named Vital, finds trends 'not immediately obvious to humans'
- Eventually, it will get an equal vote on financial decisions made by the firm

By [ELLIE ZOLFAGHARIFARD](#) 

PUBLISHED: 17:34 GMT, 19 May 2014 | **UPDATED:** 22:50 GMT, 19 May 2014



 **26**
[View comments](#)

Robots have been creeping into our homes, streets and cities – and soon they could be dominating our boardrooms.

In a world first, Japanese venture capital firm Deep Knowledge recently named an artificial intelligence (AI) to its board of directors.

The robot, named Vital, was chosen for its ability to pick up on market trends 'not immediately obvious to humans'.

Roboter als Assistenz-Professoren?

Roboter werden immer schlauer und bedrohen so viele Jobs. Campus Magazin fragt: Können Roboter bald auch Professoren ersetzen? Als Assistenten für die Lehre werden sie seit Kurzem an der Uni Marburg getestet.

Von: Fabian Mader

Stand: 03.05.2017 | [Bildnachweis](#)



Der vollautomatische Politiker

Ein Roboter könnte 2020 für das Amt des neuseeländischen Premierministers kandidieren. Er vergisst nichts, hat aber auch keinen persönlichen Stil. VON BARBARA BARKHAUSEN



Stecker statt Synapsen, Kabel anstelle des Kleinhirns - Künstliche Intelligenz macht auch vor Politikern nicht halt. FOTO: FABRICE COFFRINI/AFP

Yesterday's Jobs

Arbeiten Sie als Headhunter / Uni-Professor /
Textilarbeiter / Krankenpfleger / Partnervermittler /
Illustrator / Finanzanalyst / News-Journalist /
Uni-Assistent / Künstler / Callcenter-Mitarbeiter /
Busfahrer / Vermögensverwalter / Laborant /
Unternehmensberater / Videoverleiher / Supermarkt-
kassierer / Altenpfleger / Druckereiangestellter /
Nachhilfelehrer / Fotograf / Buchhändler / Soldat /
Reiseverkehrskaufmann / Banker / Verkäufer?

Dann werden Sie es in Zukunft noch schwerer haben.

WILL WORK FOR FREE



WE MUST REMAKE SOCIETY IN THE COMING AGE OF AI: OBAMA

THE FRONTIERS ISSUE

HOW ARTIFICIAL
INTELLIGENCE WILL
AFFECT JOBS

WIRED

We are at the beginning of a new age



Universe – C. Flammarion, Woodcut, Paris 1888, Colorit : Heikenwaelder Hugo, Vienna 1998, CC BY-SA 2.5

Urbis et Orbis

Global Agenda

Information Technology

Information and Entertainment

Emerging Technologies

How can we engineer a more responsible digital future



Creating ethical machines is essential in order to prevent technology undermining basic human values.

Image: REUTERS/Thomas Peter

Design for Values

- Cooperation
- Fairness
- Trust
- Truth
- ...

Value Pluralism and Design for Values

- Privacy
- Autonomy
- Equity
- Justice
- Dignity
- Happiness
- Wellbeing
- Safety
- Security
- Sustainability
- Health
- Friendship
- Solidarity
- Peace
- Usability
- Resilience
- Efficiency
- Flexibility

After Jeroen van den Hoven

Goals must be balanced (politically negotiated).
Otherwise, the approach is oversimplified, inadequate.

What Does Democracy Mean?

- Human rights, human dignity
- Freedom
- Self-determination
- Pluralism
- Protection of minorities
- Division of power
- Checks and Balances
- Participation
- Transparency
- Fairness
- Justice
- Legitimacy
- Anonymous, equal votes

Design for values,
value-sensitive design,
ethically aligned design

- Privacy
- ✓ Protection from misuse/exposure
- ✓ Right to be left alone

Grundgesetz für die Bundesrepublik Deutschland

Art 1

(1) Die Würde des Menschen ist unantastbar. Sie zu achten und zu schützen ist Verpflichtung aller staatlichen Gewalt.

(2) Das Deutsche Volk bekennt sich darum zu unverletzlichen und unveräußerlichen Menschenrechten als Grundlage jeder menschlichen Gemeinschaft, des Friedens und der Gerechtigkeit in der Welt.

(3) Die nachfolgenden Grundrechte binden Gesetzgebung, vollziehende Gewalt und Rechtsprechung als unmittelbar geltendes Recht.

Als Wesensmerkmal ist Menschenwürde unveräußerlich [also auch durch Terms of Use].

Menschenwürde (Art. 1 GG) hat Ewigkeitsgarantie und muss vom Staat auch gegenüber Dritten (inkl. Unternehmen und anderen Staaten) durchgesetzt werden. Das ist seine Legitimationsgrundlage.

Informational Self-Determination

1. Send (a copy of) all personal data to a personal data mailbox
2. Require legally that personal data can only be used with the informed consent of individuals
3. Create a public platform that allows individuals to determine who is allowed to use what kind of data for what period of time and purpose (and what amount of money)
4. Build AI-based digital assistants that help people to easily administer personal data according to their preferences
5. Allow governments and scientists to run statistics on data
6. Report data use transparently to data mailbox

Empowering People



www.enableeurope.eu

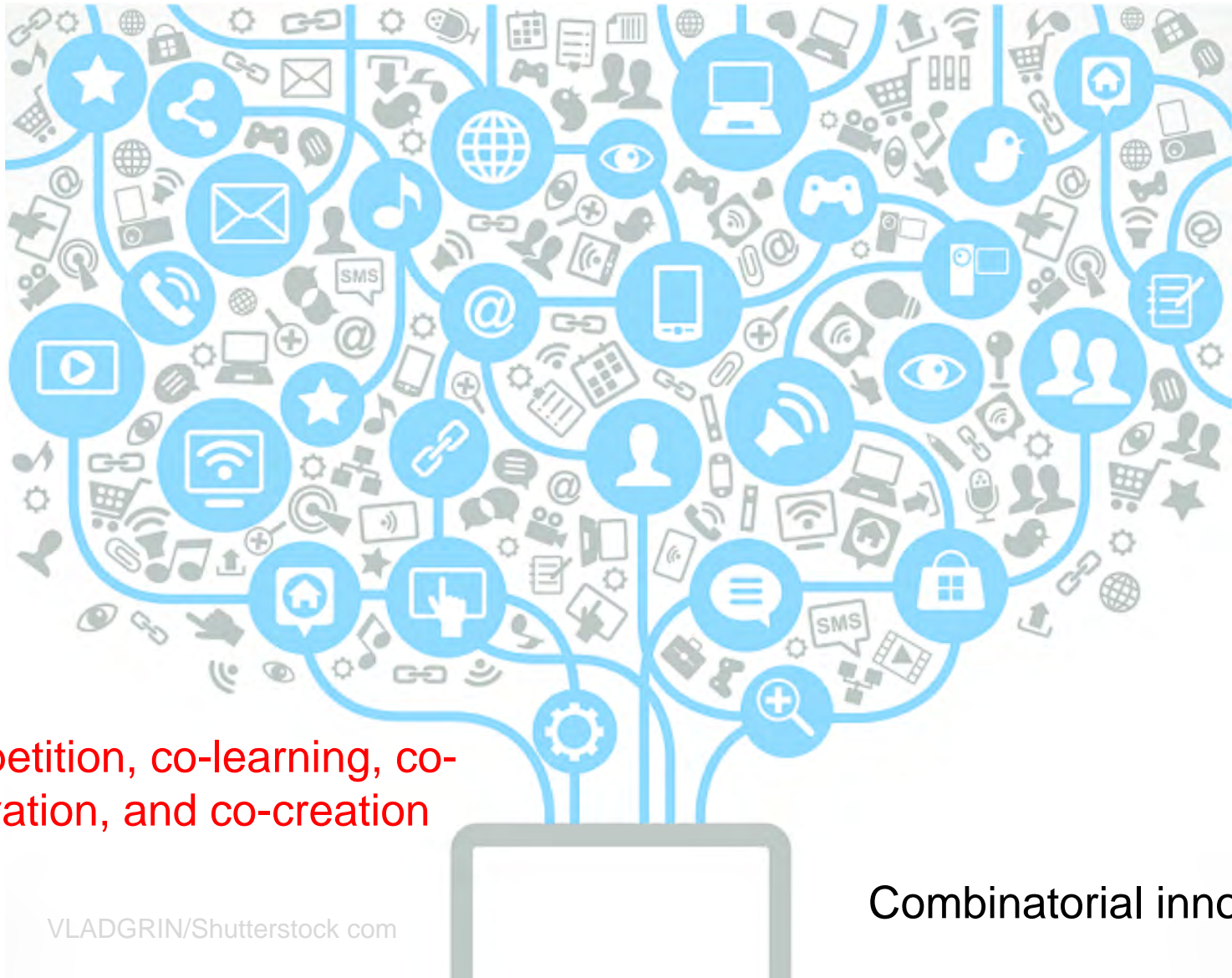
If set up well, enabling users, customers, citizens will lead to better services, better products, better businesses, better neighborhoods, smarter cities, smarter societies ...



Nathan
Sawaya

Combinatorial Innovation,
Co-Evolution (needs Freedom)

Information, Innovation, Production and Service Ecosystem




co-epetition, co-learning, co-
innovation, and co-creation

Combinatorial innovation



John Lund/Getty Images

 English ▼



 6



The Hidden Danger of Big Data

Aug 16, 2016 | **CARLO RATTI , DIRK HELBING**

With big data, we can multiply our options and filter out things we don't want to see. But there is much to be said for making discoveries through pure serendipity: contingency and randomness often furnish the transformational or counterintuitive ideas that propel humanity forward.

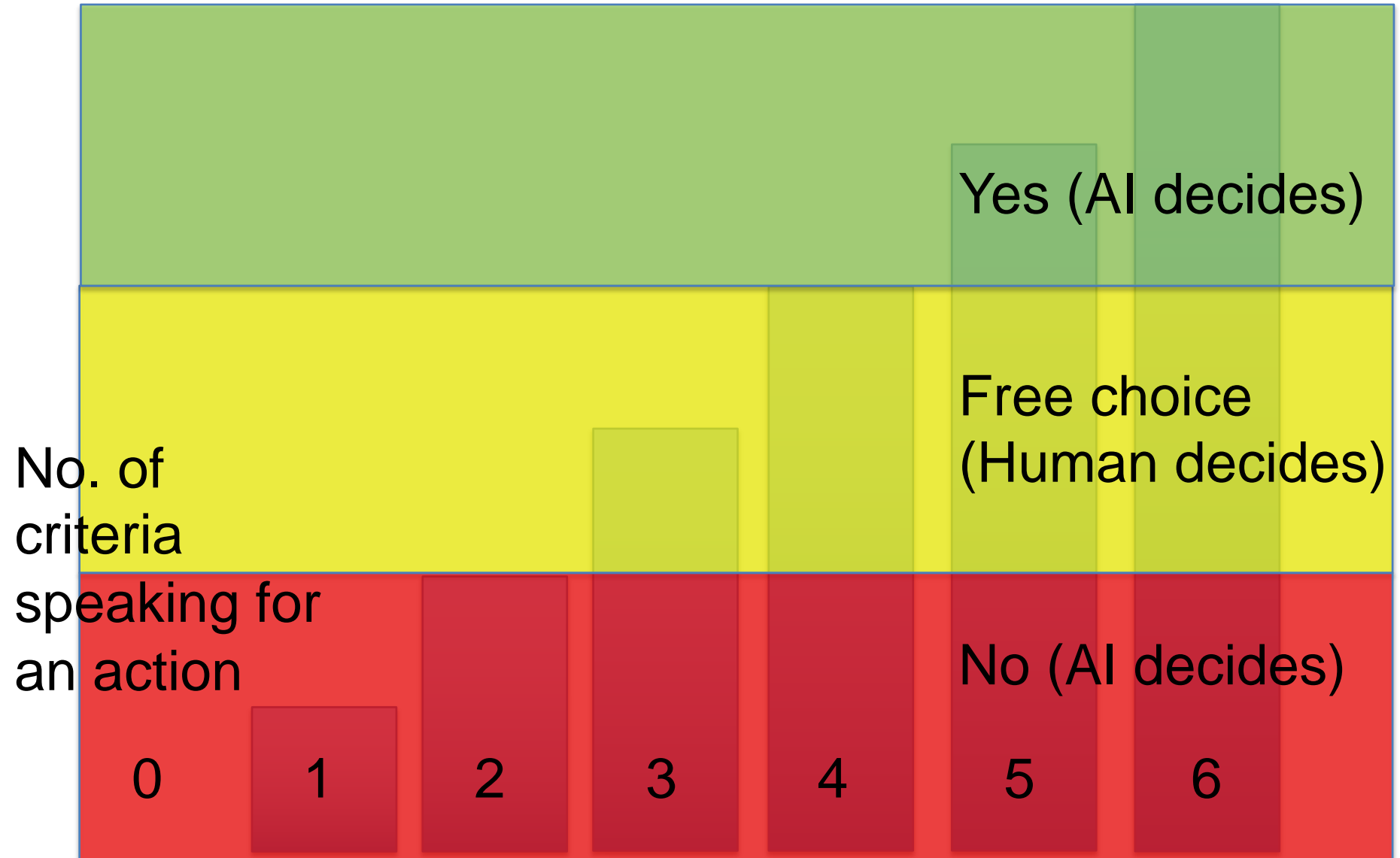
Artificial Intelligence Taking Over

Take action?



Re-Inventing Freedom in the Digital Age

Take action?



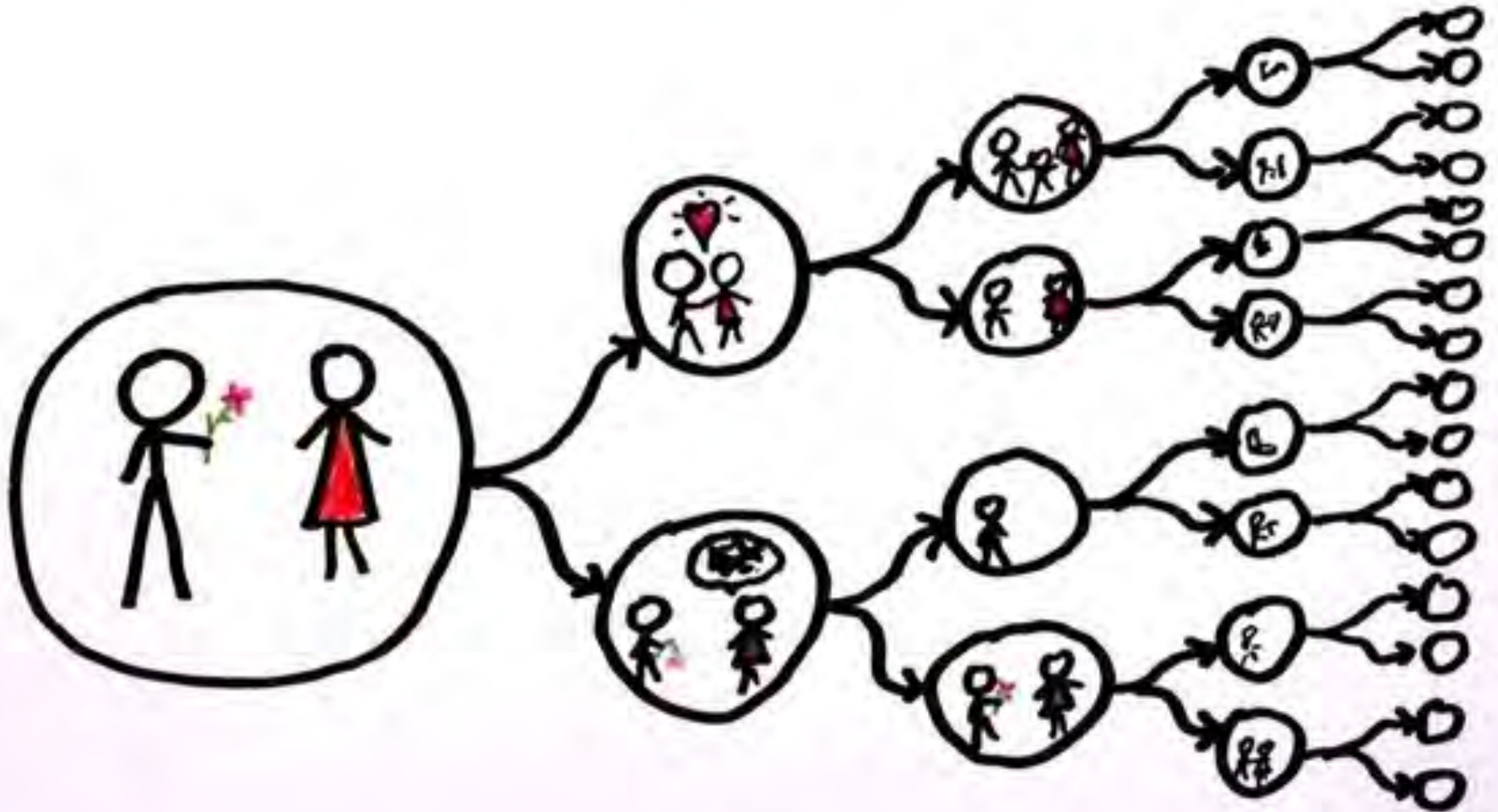
Unser Wille ist doch nicht so unfrei

Seit dem berühmten Libet-Experiment glauben viele, statt des freien Willens würden unbewusste Hirnprozesse über uns gebieten. Ein ähnlicher Versuch widerspricht nun.

von Daniela Zeibig

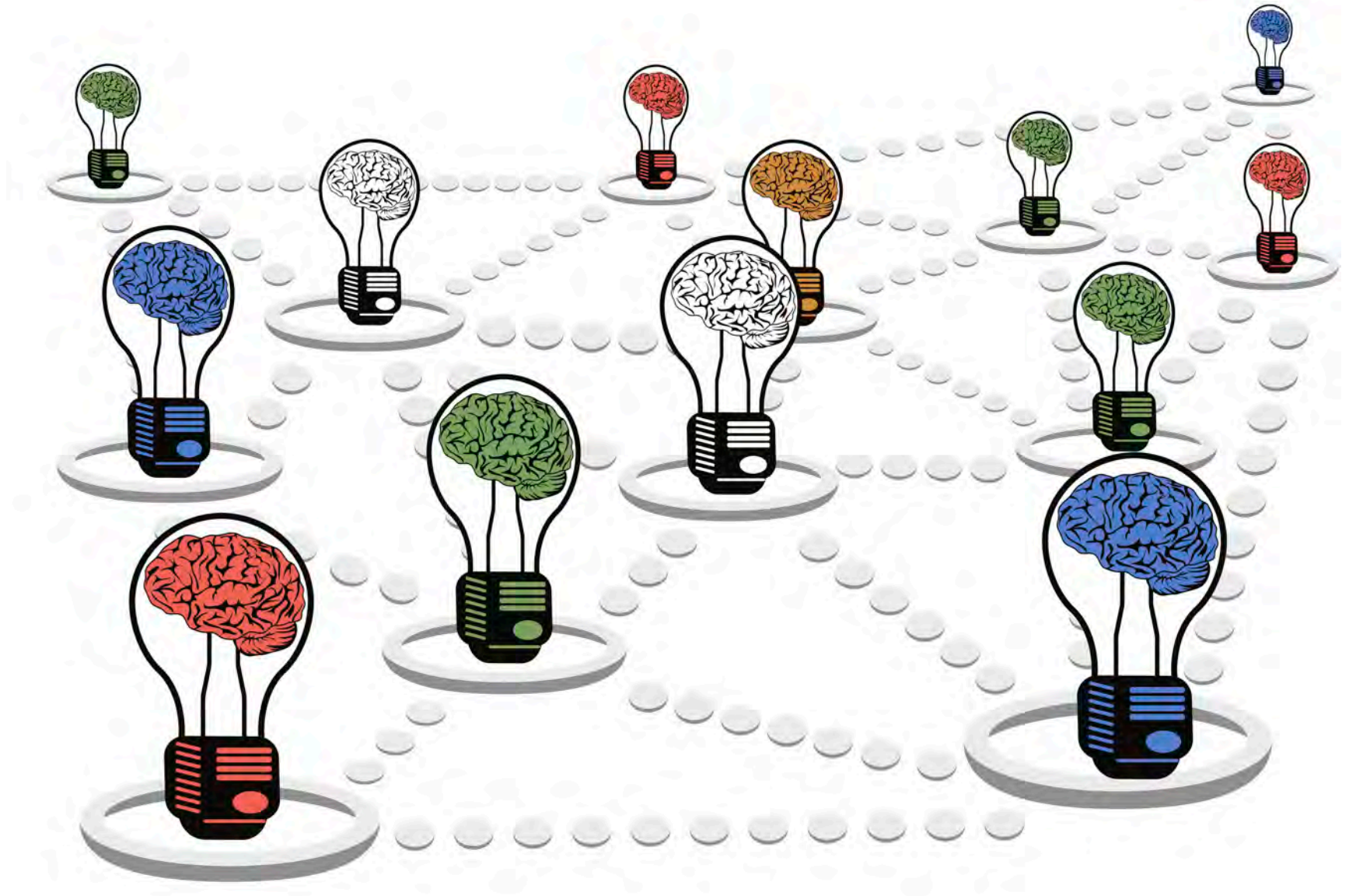


Ask At Relevant Decision Points



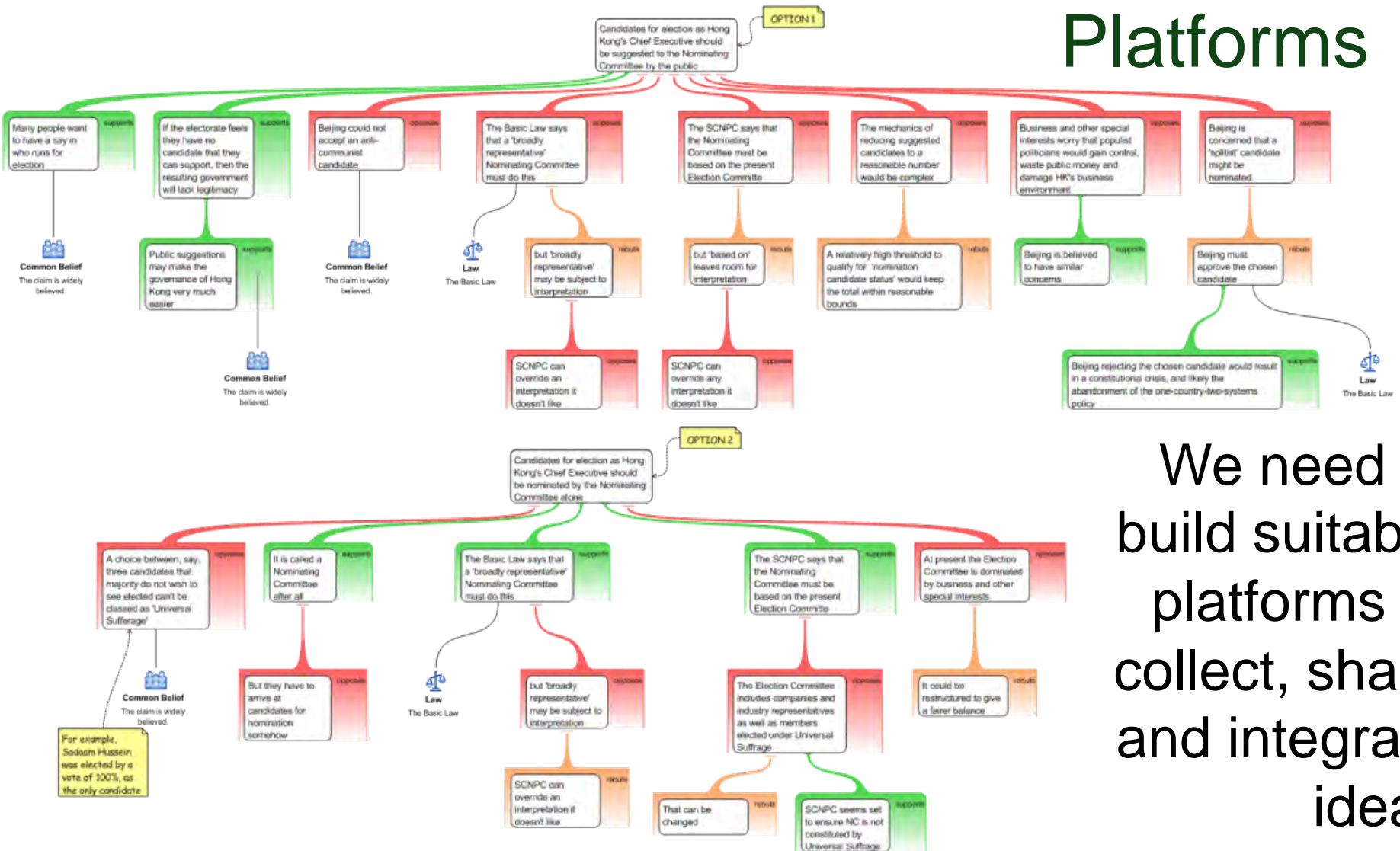
Democracy 2.0: Boosting collective intelligence

Bring the Best Ideas of Many Minds Together



Online Deliberation Platforms

A way of electing Hong Kong's next Chief Executive must be found in time for legislation to be enacted by the 2017 election. This must meet China's promise of Universal Suffrage and satisfy the majority of HK citizens. It is also limited by the Basic Law (mini-constitution) and 'interpretations' by the Select Committee of the National Peoples Council (SCNPC)



We need to build suitable platforms to collect, share and integrate ideas

Diversity Wins, Not the Best



Leaderboard

Display top leaders.

Rank	Team Name	Best Score	% Improvement	Last Submit Time
1	BellKor's Pragmatic Chaos	0.8558	10.05	2009-06-26 18:42:37
Grand Prize - RMSE \leq 0.8563				
2	PragmaticTheory	0.8582	9.80	2009-06-25 22:15:51
3	BellKor in BigChaos	0.8590	9.71	2009-05-13 08:14:09
4	Grand Prize Team	0.8593	9.68	2009-06-12 08:20:24
5	Dace	0.8604	9.56	2009-04-22 05:57:03
6	BigChaos	0.8613	9.47	2009-06-23 23:06:52
Progress Prize 2008 - RMSE = 0.8616 - Winning Team: BellKor in BigChaos				
7	BellKor	0.8620	9.40	2009-06-24 07:16:02
8	Gravity	0.8634	9.25	2009-04-22 18:31:32
9	Opera Solutions	0.8638	9.21	2009-06-22 05:53:30
10	xlvectur	0.8639	9.20	2009-06-26 13:49:04
11	xiangliang	0.8639	9.20	2009-06-26 07:47:34
12	BruceDengDaoCiYiYou	0.8641	9.18	2009-06-02 17:08:31
13	Ces	0.8642	9.17	2009-06-24 14:34:14
14	majia2	0.8642	9.17	2009-06-23 08:07:50

Top-down
and majority
decisions
obstruct
collective
intelligence

Wisdom of
crowds
requires
independent
exploration
and then
integration



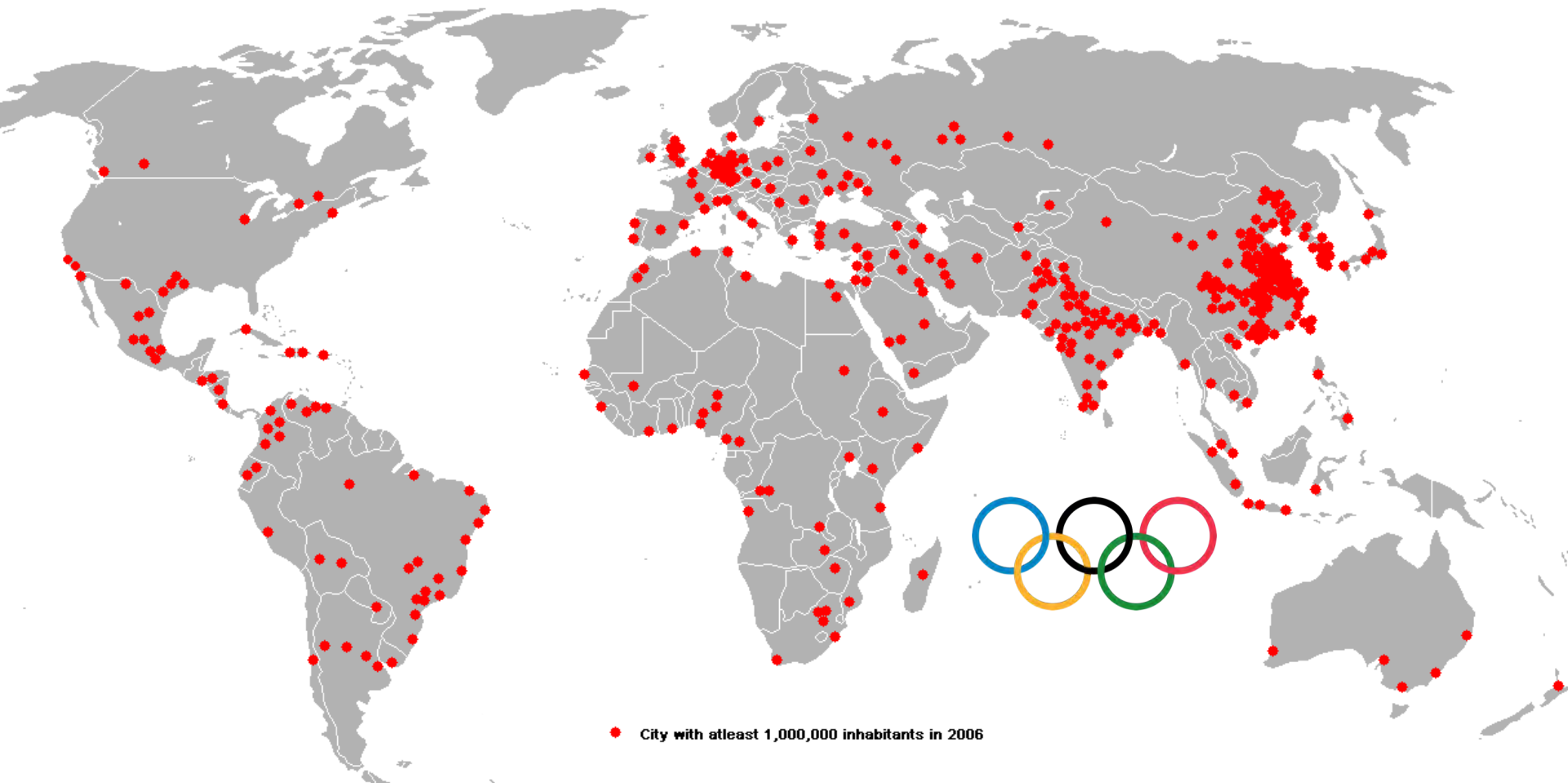
IMAGINECHINA/CORBIS

Many choices that people consider their own are already determined by algorithms.

Build digital democracy

Open sharing of data that are collected with smart devices would empower citizens and create jobs, say **Dirk Helbing** and **Evangelos Pournaras**.

Countering Global Problems Bottom-Up: **City Olympics** for Better Climate, Energy, Sustainability + Resilience Solutions



● City with atleast 1,000,000 inhabitants in 2006

Public domain ([SoccerFan](#) (update to a map done by [Bogdan](#)))

Collective Intelligence Beats Artificial Intelligence

Why AI isn't going to solve Facebook's fake news problem

Moderation will always be a problem on a platform this huge

By [James Vincent](#) | [@jjvincent](#) | Apr 5, 2018, 2:23pm EDT



SHARE

The background of the lower half of the image is a dark, swirling, liquid-like pattern in shades of blue and purple. Scattered throughout this pattern are numerous small, semi-transparent Facebook 'f' logos. In the center of this background, the word 'facebook' is written in its characteristic white, lowercase, sans-serif font.

facebook

Facebook outsources its fake news problem to Wikipedia—and an army of human moderators



YouTube will use Wikipedia to tackle fake news - but failed to tell Wikipedia



YouTube chief executive Susan Wojcicki at SXSW CREDIT: BLOOMBERG

Personalized Education: Unleashing creativity and personal potentials







「ざわりこち」でつながる
テレプレゼンスロボット
テレサ V

2012

テレサ V は、人の分身となるロボットです。コックピットの操縦者と同じように動き、ロボットの見える風景や聴いている音、さらにロボットがモノや人にふれた感覚を操縦者に伝えます。遠く離れた場所にいるロボットとつながることで、操作者はロボットがいる場所に自分が入り込んだかのような感覚を味わうことができます。

あらゆる場所に瞬間移動できる「どこでもドア」のように、遠く離れた場所を訪れ、さまざまな人とふれあいたい。普段行きたい

研究員
Charitha
水田 友樹

Robot Teleres V

who sits on the cockpit to bond with a dexterous robot which becomes your alter ego. The robot's body through visual, auditory and haptic sensation, the user can operate the robot which is far apart as if they were in the world without any time and space constraints. The enables the user to visit places that you couldn't imagine possible to go around the world, and places that you have never experienced before.

Project Manager: Masahiro Furukawa, Tokyo Metropolitan University, Japan

のじょうほう みんなのじょうほう
あつめておどろう

日本科学未来館













EXIT



GOOGLE HITS THE ROAD

How Google's self-driving vehicles work

For a vehicle to drive itself, it must continuously and accurately address these four questions:

CHALLENGES

"When you look at the statistics for the 1.4 billion people who are killed or badly injured every year, over 80% of that is human error. If you could apply a technology that's always paying attention and never gets distracted, that's a 100-fold opportunity to save lives and make the world a better place!"

—Chris Bostrom, Google self-driving car



BEHIND THE GOOGLE SELF-DRIVING PROJECT

If you live in the Bay Area, you've driven roads with roundabouts and winding, narrow stretches of lanes. Google's cars have been granted a license to drive on these roads, and they've been able to handle them without any issues.

Google™

self-driving car

8th St

in Street

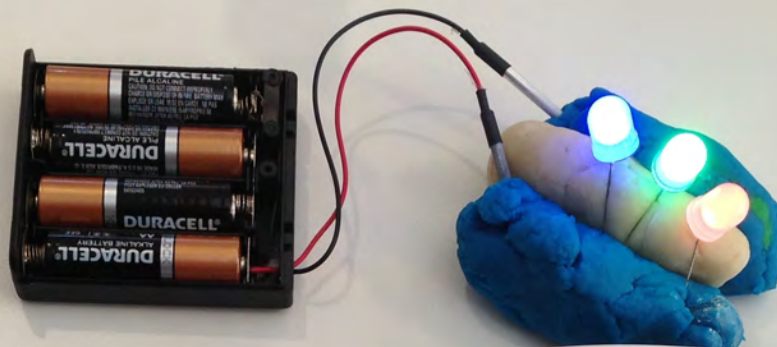
Sunset Ave

PLEASE HOLD THE GOOGLE SELF-DRIVING CAR









HOW YOU CAN TINKER Sculpt Your Own Circuits

We like squishy circuits because they're a perfect mix of tech and art. Plus, the accessible materials you use to craft them are delightfully tactile and creativity-inducing. Just whip up two types of moldable dough in your kitchen and start making magic. Battery packs, LEDs, buzzers, motors, and more will come into play later, depending on what you build.

START WITH CONDUCTIVE DOUGH

Mix 1 cup (240 mL) water, 1 cup (120 g) flour, $\frac{1}{4}$ cup (75 g) salt, 3 tablespoons cream of tartar, 1 tablespoon vegetable oil, and some drops of food coloring in a pot over medium heat. Stir continuously as the mixture boils and thickens, and keep on stirring until it forms a ball in the pot's center. Let it cool slightly and knead it on a floured surface until it's nice and smooth. Store it in an airtight container; it will stay malleable for weeks.



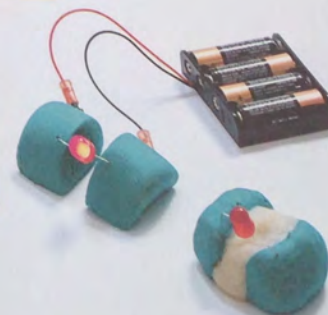
NOW FOR THE INSULATING DOUGH

To make complicated circuits, you need a nonconductive dough, too. Mix 1 cup (120 g) flour, $\frac{1}{2}$ cup (100 g) sugar, and 3 tablespoons vegetable oil in a bowl. Then incorporate up to $\frac{1}{2}$ cup (120 mL) distilled water in tiny increments (about 1 tablespoon at a time) until the dough forms a cohesive lump. Knead in a little more flour until it's easy to mold with your hands. You can store this dough just like its conductive doppelgänger.

MOVE ON TO COMPLEX BUILDS Now that you've got a simple LED under your belt, try replacing it with a DC motor or buzzer—just remember, you may need to use parallel circuits, in which electricity is allowed to flow into action. You can also play with independently of one another (like the dark green circuit below). Or experiment with series circuits, in which components are linked together across sections of resistant dough and rely on each other to transmit current from one to the next (like the orange circuit). Regardless of which circuits you build, let the creative medium of playdough inspire you to craft ones that are both functional and expressive.



PUT YOUR DOUGHS TO USE Grab two lumps of conductive dough, and poke one leg of each LED into each one. Take the two leads of a battery pack and stick the positive one into the lump with the LED's positive leg, and the negative one into the lump with the LED's negative leg. See the light go on? Bingo—that's your first squishy circuit. You always need a gap between your negative and positive dough lumps, so next try placing some insulating dough between them to divert electricity from the battery pack into your LED. This allows for more solid construction without any shorts.



Nintendo is bringing Labo to schools across North America this year

A pilot program is already underway in New York

By [Andrew Webster](#) | Oct 23, 2018, 8:00am EDT

[f](#) [t](#) [SHARE](#)



MOST READ



MacBook Air vs. MacBook Pro: how Apple laptops compare



NINTENDO
SWITCH™

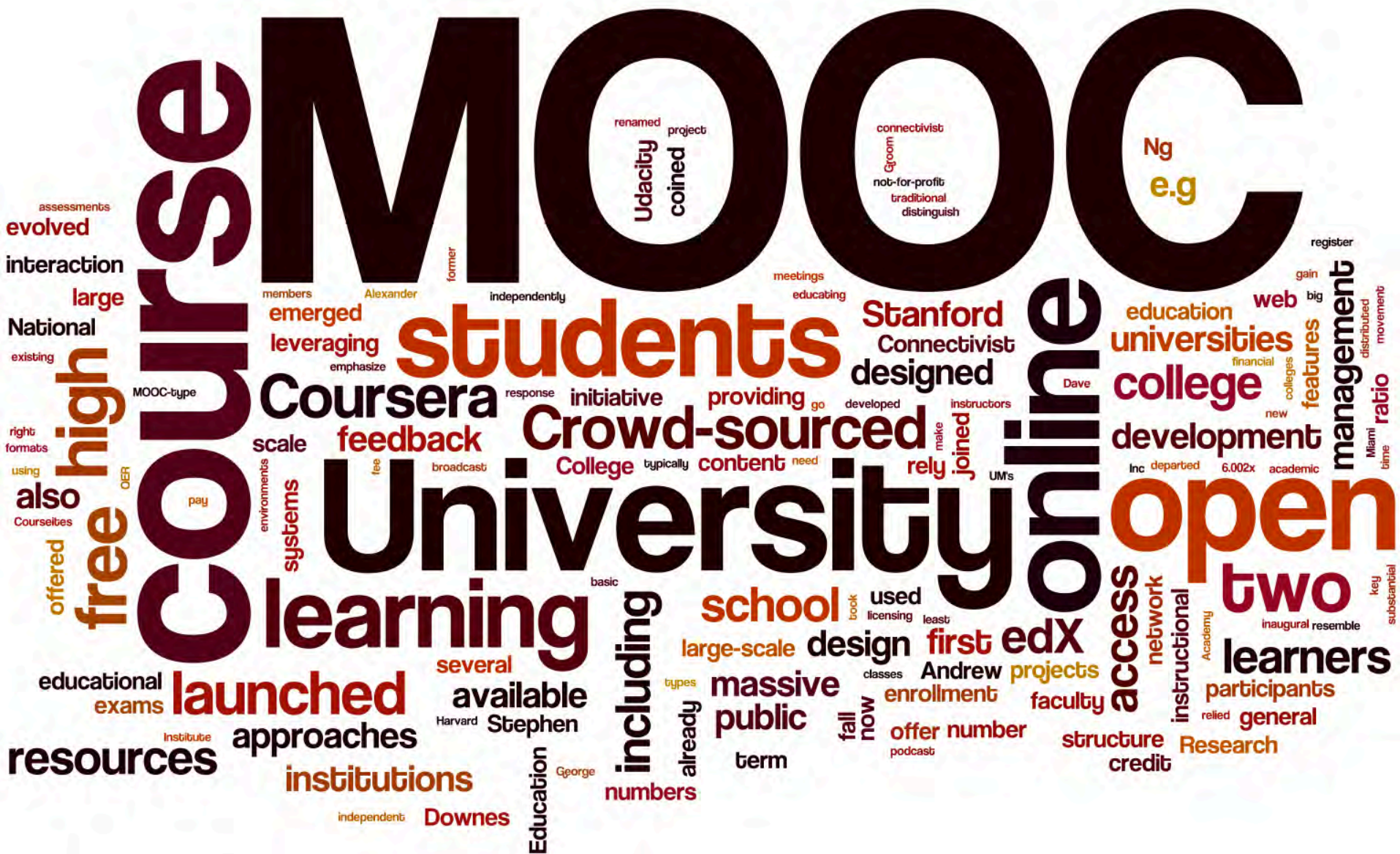


Education 4.0

- creative work
- produce information and knowledge, including cultural products
- personalized education
- creativity and imagination
- ability to find relevant information and critically evaluate it
- curate information and to produce new knowledge
- share knowledge, collaborate with others, and create services and products collaboratively
- concentrate on tasks
- flexibly adapt to new opportunities
- interaction- and systems-oriented way of thinking
- digital literacy and good education will be more important than ever

Source: The Automation of Society Is Next

Massive Open Online Courses

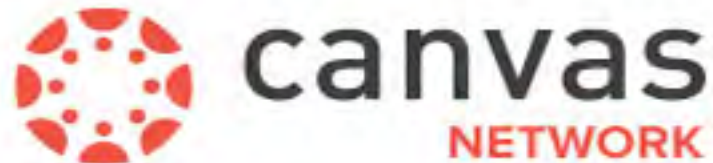


Learning Platforms

The Coursera logo features a stylized blue infinity symbol followed by the word "coursera" in a lowercase, blue, sans-serif font.

The Udacity logo consists of a large, orange, stylized letter "U" followed by the word "UDACITY" in a bold, uppercase, sans-serif font. Below it, the tagline "Learn. Think. Do." is written in a smaller, lowercase, sans-serif font.

The edX logo features the letters "ed" in a pink, lowercase, sans-serif font, followed by a large, blue, stylized "X" that has a grey outline.

The Canvas Network logo features a red circular icon composed of smaller dots, followed by the word "canvas" in a lowercase, sans-serif font, and the word "NETWORK" in a smaller, uppercase, red, sans-serif font below it.

The NovoED logo features a stylized blue icon resembling three horizontal bars with pointed ends, followed by the word "NovoED" in a bold, uppercase, sans-serif font.

The iversity logo features a colorful, abstract circular icon with overlapping segments in blue, yellow, and red, followed by the word "iversity" in a lowercase, sans-serif font.

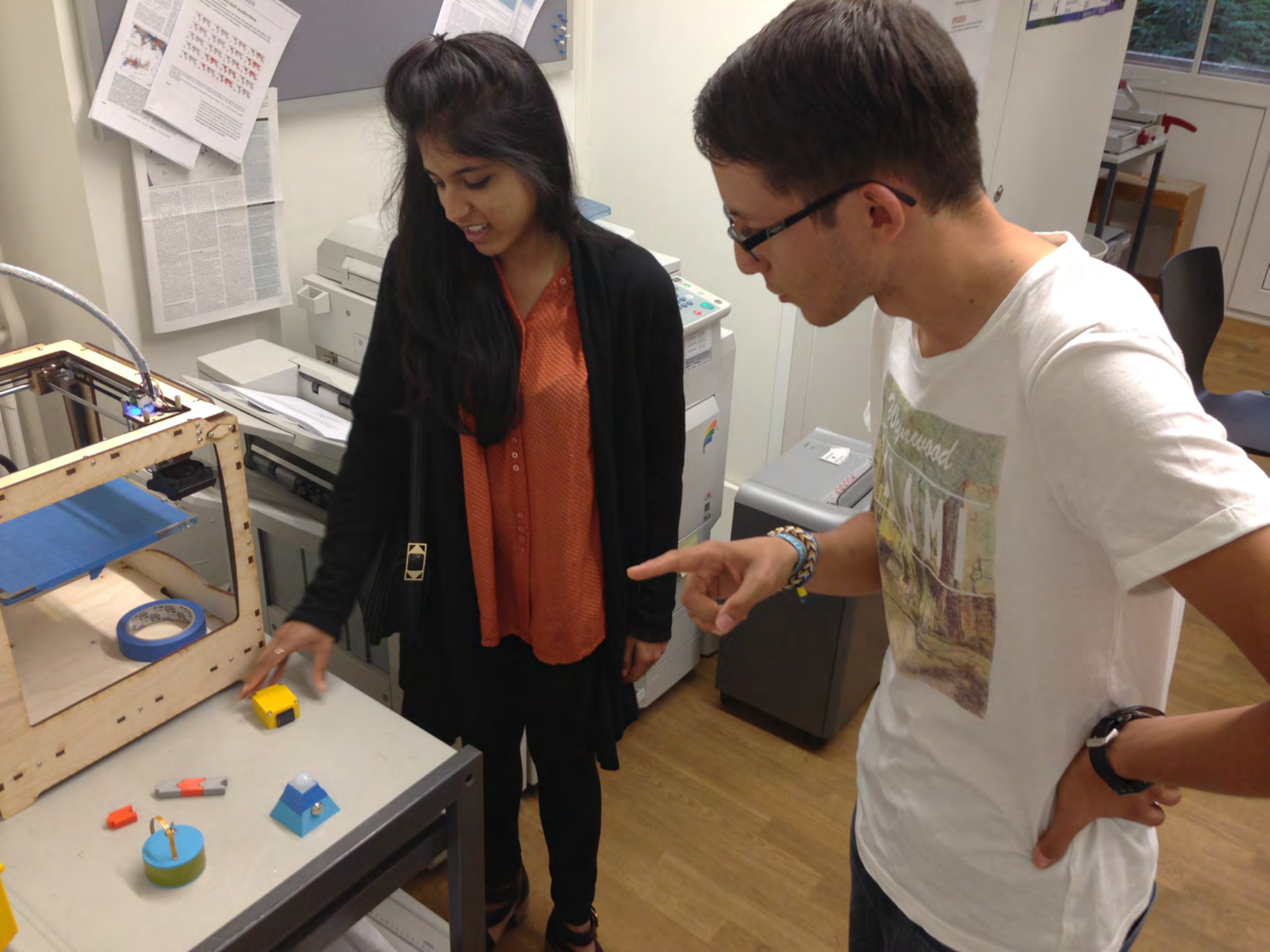
The Open2Study logo features a green and grey stylized icon resembling a book or a stylized "O", followed by the words "OPEN" and "2 STUDY" in a sans-serif font, with "OPEN" in green and "2 STUDY" in grey.

The Future Learn logo features a pink rectangular background with a white stylized icon resembling a staircase or a path, followed by the words "Future" and "Learn" in a white, sans-serif font.









A man in a blue suit is holding a smartphone, looking directly at the camera. The background is a dimly lit room with wooden beams. Overlaid on the image is a quote in large, white, sans-serif font.

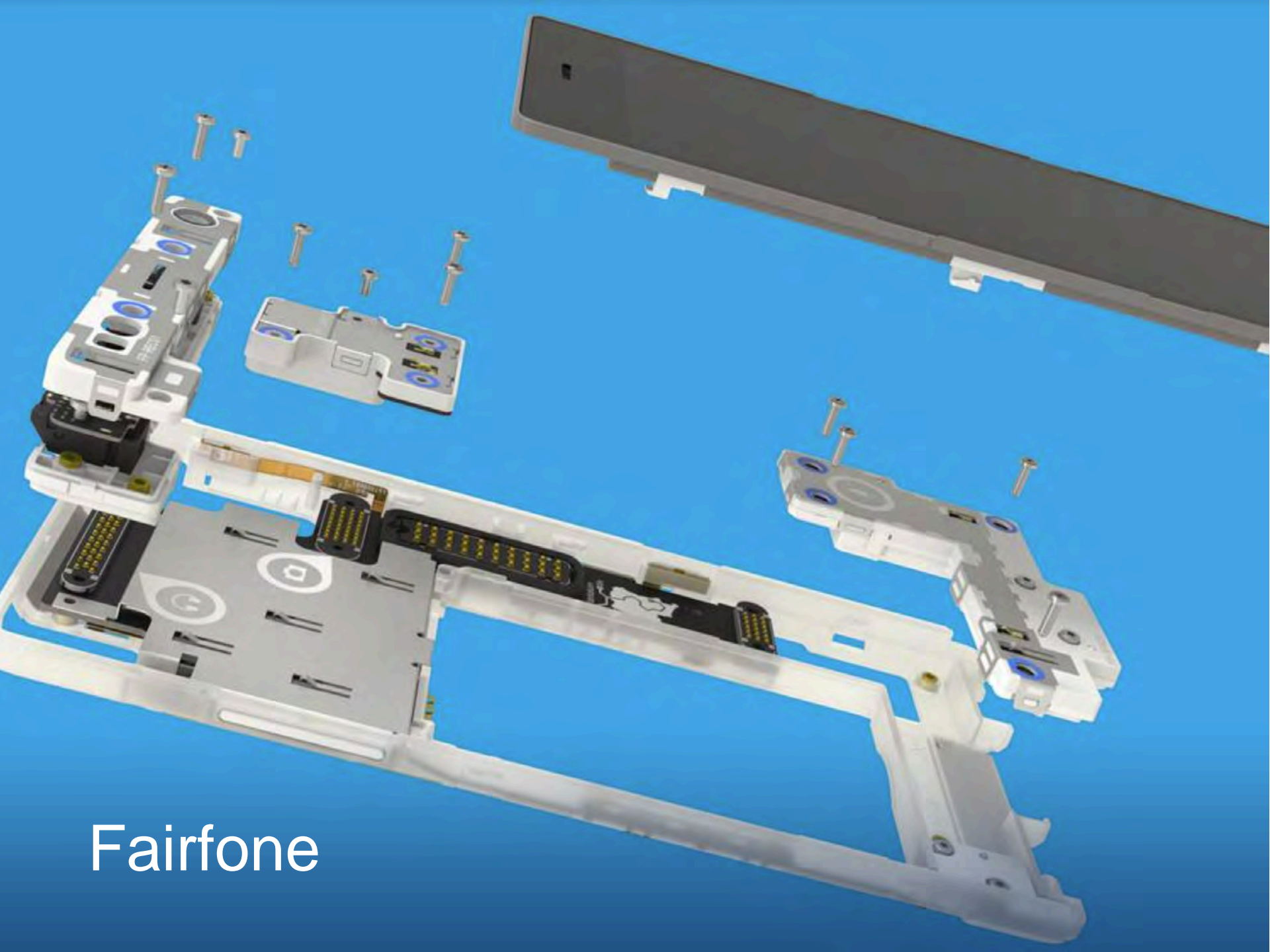
I have not
failed. I've
just found
10.000 ways
that don't
work.

Thomas A.
Edison









Fairfone

Fablabs Around the World





the **WHITE HOUSE**
PRESIDENT BARACK OBAMA

[BRIEFING ROOM](#)

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NATION OF MAKERS

Augmented Reality



Turn beginners into professionals





CREATIVITY



The 7C's: Success Principles for a Complex World

- Co-learning
- Co-creation
- Combinatorial innovation
- Co-ordination
- Co-operation
- Co-evolution
- Collective intelligence

Be a game changer!