

Ethics and Computer Science

Matthieu Moy
(Based on Aurélien Tabard's slides)

UCBL

2020-2021



Outline

- 1 Why Talk About Ethics?
- 2 Environmental consequences of digital
- 3 Minorities and Computer Science
- 4 Data and Artificial Intelligence
- 5 Dark Patterns
- 6 It's your turn



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This Class

- Ideal goal: encourage you to ask yourself relevant questions (probably unrealistic)
- My goal: give you concrete examples. If you ever cite any of these examples in a discussion → mission accomplished for me.
- Why do that:
 - ▶ The world is changing because/thanks to us
 - ▶ We have a responsibility in what it's becoming



Outline of this section

1 Why Talk About Ethics?

- Computers are Transforming the Society: Really?



World is Changing

- Greatest market capitalization (Q1 2020):

Microsoft 1,200 B\$

Apple Inc. 1,113 B\$

Amazon.com 970 B\$

Alphabet Inc. 799 B\$

Alibaba Group 521 B\$

Facebook, Inc. 475 B\$

Tencent 471 B\$

Berkshire Hathaway 440 B\$ ← conglomerate company

Visa 357 B\$ ← finally a bank!

- 2 similar ways to make money

- ▶ AccorHotel, 1st French group, 6th worldwide, 4,800 hotels et 280,000 employees, created in 1967. 11.2 B\$ capitalization (2019).
- ▶ AirBNB, no hotel, 3,100 employees. Founded in 2008. 30 B\$ capitalization.



Internet Access Considered a Fundamental Right

- “the same rights people have offline must also be protected online”, UN Resolution, 2006.
- “Loi pour une République numérique”: “garantir un accès non discriminé au réseau pour l’ensemble des acteurs économiques”, “permettre aux plus démunis de bénéficier de la continuité de leur connexion”, France, 28 September 2016.

~ Is internet access as important as
water, electricity (and telephone)?



Responsibility

Can you go to jail for writing code?



The New York Times

Volkswagen Engineer Gets Prison in Diesel Cheating Case



James Liang, a Volkswagen engineer, is the first employee sent to prison in the scandal that has tainted the company's reputation and cost it billions in fines and settlements with consumers. Virginia Lozano/Detroit News, via Associated Press

By Bill Vlasic

Aug. 25, 2017



DETROIT — A Volkswagen engineer was sentenced on Friday to 40 months in prison for his role in the German automaker's decade-long scheme to cheat on federal emissions tests for diesel-powered cars sold in the United States.



ⓘ 🔒 https://www.dailymail.co.uk/news/article-5248221/Google-engineer-fired-sexist-memo-suing.html



Google engineer fired for 'sexist memo' last year is suing the tech giant alleging it discriminates against conservative white men

- Google fired software engineer James Damore in August after his controversial internal memo went viral
- He is now suing the tech firm claiming they discriminated against conservative white men
- Lawsuit states that Google's efforts to make its workplace more diverse and close the paygap was 'extreme — and illegal'
- Damore also complained he was 'singled out, mistreated, and systematically punished and terminated' after his ten page internal memo was leaked
- The controversial document said women could not get ahead at Google because of physiological differences such as they were naturally more neurotic
- Damore also claimed that Google stifles opinions that don't fit its 'left-wing bias'
- CEO Sundar Pichai said the engineer had violated Google's code of conduct by 'advancing harmful gender stereotypes'



Do Employees Take Their Responsibility?

- Example: Google Employees Vs Pentagon's Maven Program

- ▶ Maven Program: use artificial intelligence in drones
- ▶ Weapon + Artificial intelligence = ?
- ▶ Petition signed by 3,000 Google employees:

"We believe that Google should not be in the business of war. Therefore we ask that Project Maven be cancelled [...] This plan will irreparably damage Google's brand and its ability to compete for talent [...] Google's unique history, its motto "don't be evil", and its direct reach into the lives of billions of users set it apart."

- ▶ Contract not renewed by Google



Responsibility

Can you influence the world with software?



Experimental evidence of massive-scale emotional contagion through social networks

Adam D. I. Kramer^{a,1}, Jamie E. Guillory^{b,2}, and Jeffrey T. Hancock^{b,c}

^aCore Data Science Team, Facebook, Inc., Menlo Park, CA 94025; and Departments of ^bCommunication and ^cInformation Science, Cornell University, Ithaca, NY 14853

Edited by Susan T. Fiske, Princeton University, Princeton, NJ, and approved March 25, 2014 (received for review October 23, 2013)

Emotional states can be transferred to others via emotional contagion, leading people to experience the same emotions without their awareness. Emotional contagion is well established in laboratory experiments, with people transferring positive and negative emotions to others. Data from a large real-world social network, collected over a 20-y period suggests that longer-lasting moods (e.g., depression, happiness) can be transferred through networks [Fowler JH, Christakis NA (2008) *BMJ* 337:a2338], although the results are controversial. In an experiment with people who use Facebook, we test whether emotional contagion occurs outside of in-person interaction between individuals by reducing the amount of emotional content in the News Feed. When positive expressions were reduced, people produced fewer positive posts and more negative posts; when negative expressions were reduced, the opposite pattern occurred. These results indicate that emotions expressed by others on Facebook influence our own emotions, constituting experimental evidence for massive-scale contagion via social networks. This work also suggests that, in contrast to prevailing assumptions, in-person interaction and non-verbal cues are not strictly necessary for emotional contagion, and that the observation of others' positive experiences constitutes a positive experience for people.

computer-mediated communication | social media | big data

Emotional states can be transferred to others via emotional contagion, leading them to experience the same emotions as

demonstrated that (i) emotional contagion occurs via text-based computer-mediated communication (7); (ii) contagion of psychological and physiological qualities has been suggested based on correlational data for social networks generally (7, 8); and (iii) people's emotional expressions on Facebook predict friends' emotional expressions, even days later (7) (although some shared experiences may in fact last several days). To date, however, there is no experimental evidence that emotions or moods are contagious in the absence of direct interaction between experiencer and target.

On Facebook, people frequently express emotions, which are later seen by their friends via Facebook's "News Feed" product (8). Because people's friends frequently produce much more content than one person can view, the News Feed filters posts, stories, and activities undertaken by friends. News Feed is the primary manner by which people see content that friends share. Which content is shown or omitted in the News Feed is determined via a ranking algorithm that Facebook continually develops and tests in the interest of showing viewers the content they will find most relevant and engaging. One such test is reported in this study: A test of whether posts with emotional content are more engaging.

The experiment manipulated the extent to which people ($N = 689,003$) were exposed to emotional expressions in their News Feed. This tested whether exposure to emotions led people to change their own posting behaviors, in particular whether exposure to emotional content led people to post content that was consistent with the exposure—thereby testing whether exposure



[Article](#) [Talk](#)[Read](#) [Edit](#) [View history](#)[Search Wikipedia](#)

Facebook–Cambridge Analytica data scandal

From Wikipedia, the free encyclopedia

The **Facebook–Cambridge Analytica data breach** was a [data leak](#) in early 2018 whereby millions of [Facebook](#) users' personal data was harvested without consent by [Cambridge Analytica](#), predominantly to be used for [political advertising](#).^[1] It is the largest known leak in Facebook history.^[2]

The data was collected through an app created in 2013 by [Dr. Aleksandr Kogan](#) (Dr. Aleksandr Spectre, at the time), a Cambridge academic, and consisted of a series of questions to build psychological profiles on users.^[3] The app not only harvested the personal data of the users that completed the questions, but also of the users' Facebook friends.^[3] Cambridge Analytica sought to sell the data of American voters to political campaigns and ultimately provided assistance and analytics to the [Ted Cruz](#) and [Donald Trump](#) campaigns.^{[2][4]}

The data breach was disclosed in 2018 by [Christopher Wylie](#), a former Cambridge Analytica employee, in interviews with The Guardian and The New York Times.^[5] In response, Facebook apologized for their role in the data harvesting and their CEO Mark Zuckerberg testified in front of Congress.^[5] These happenings sparked an online movement [#DeleteFacebook](#), which trended on Twitter.^[6]



A user of the Cambridge Analytica and Facebook product.

Au delà des aspects légaux

Cours de M2 : Droit de l'informatique et de l'internet (S4)

- Protection des logiciels
- Protection des données
- Fraudes Informatiques
- Un droit pour l'Internet

Can a Computer Kill You?



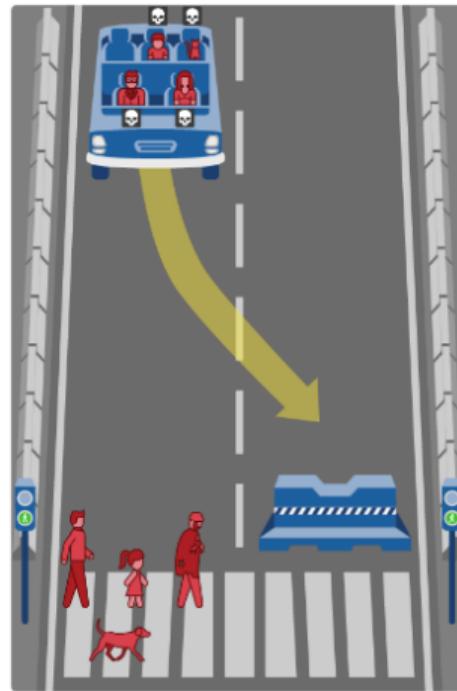
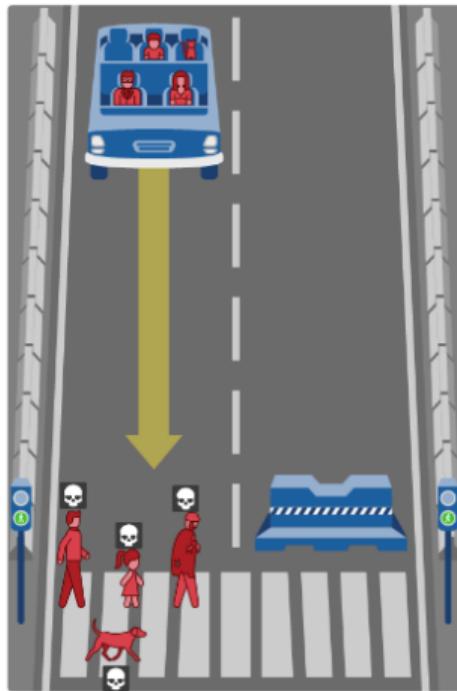
Can a Computer Kill You?

Yes, obviously, see course on famous bugs.



Can a Computer Decide to Kill You?

Can a Computer Decide to Kill You?



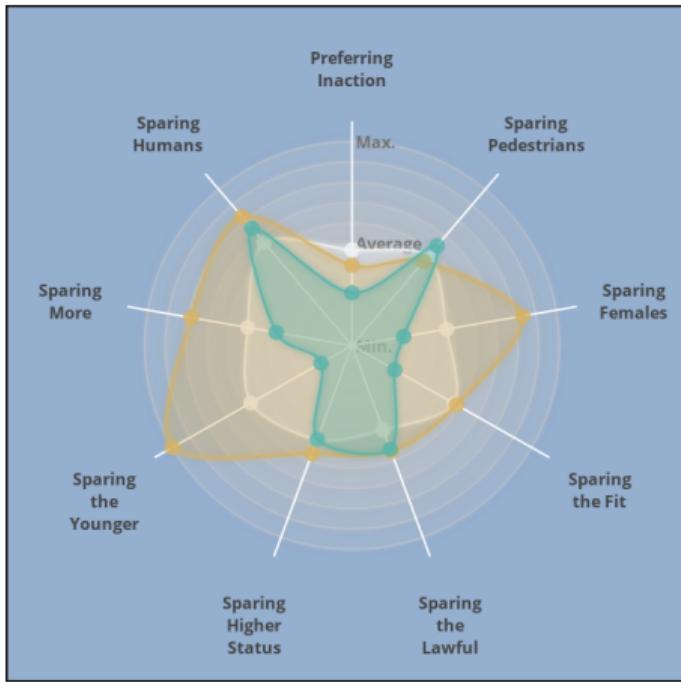
Can a Computer Decide to Kill You?

Who? In which country?



Can a Computer Decide to Kill You?

Who? In which country?



The gray area is the world average.

<http://moralmachineresults.scalablecoop.org/>

More thoughts on the topic

“Mettre l'éthique dans l'algorithme ?” <https://www.lemonde.fr/blog/binaire/2018/06/12/mettre-lethique-dans-lalgorithme/>



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Disclaimer

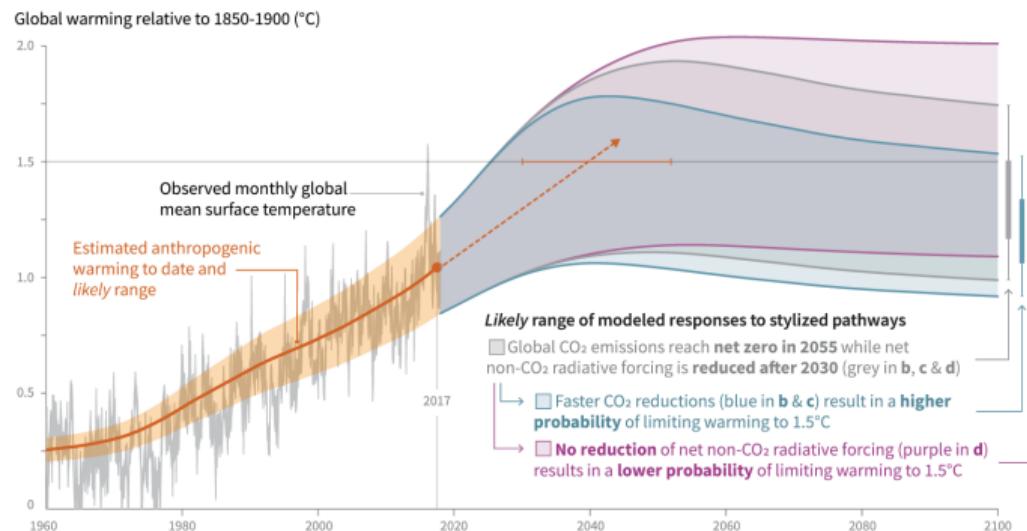
- Very complex topic
- Very incomplete presentation here
- Focus on global warming, by far not the only issue



Global Warming: Where are We (IPCC aka GIEC report)

Cumulative emissions of CO₂ and future non-CO₂ radiative forcing determine the probability of limiting warming to 1.5°C

a) Observed global temperature change and modeled responses to stylized anthropogenic emission and forcing pathways



IPCC (GIEC) report: Global Warming of 1.5 °C
<https://www.ipcc.ch/sr15/chapter/summary-for-policy-makers/>

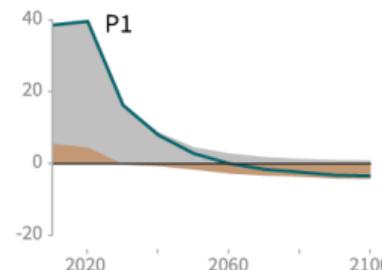


Global Warming: Scenarios to Remain Under 1.5 °C

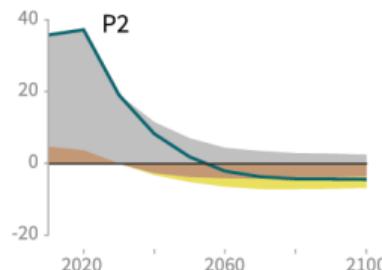
Breakdown of contributions to global net CO₂ emissions in four illustrative model pathways

● Fossil fuel and industry ● AFOLU ● BECCS

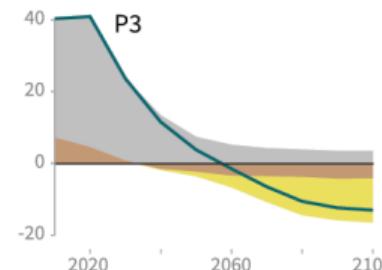
Billion tonnes CO₂ per year (GtCO₂/yr)



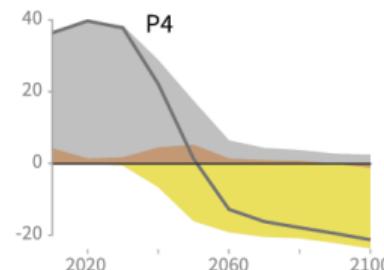
Billion tonnes CO₂ per year (GtCO₂/yr)



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Billion tonnes CO₂ per year (GtCO₂/yr)



P1: A scenario in which social, business and technological innovations result in lower energy demand up to 2050 while living standards rise, especially in the global South. A downsized energy system enables rapid decarbonization of energy supply. Afforestation is the only CDR option considered; neither fossil fuels with CCS nor BECCS are used.

P2: A scenario with a broad focus on sustainability including energy intensity, human development, economic convergence and international cooperation, as well as shifts towards sustainable and healthy consumption patterns, low-carbon technology innovation, and well-managed land systems with limited societal acceptability for BECCS.

P3: A middle-of-the-road scenario in which societal as well as technological development follows historical patterns. Emissions reductions are mainly achieved by changing the way in which energy and products are produced, and to a lesser degree by reductions in demand.

P4: A resource- and energy-intensive scenario in which economic growth and globalization lead to widespread adoption of greenhouse-gas-intensive lifestyles, including high demand for transportation fuels and livestock products. Emissions reductions are mainly achieved through technological means, making strong use of CDR through the deployment of BECCS.

IPCC (GIEC) report: Global Warming of 1.5 °C
<https://www.ipcc.ch/sr15/chapter/summary-for-policy-makers/>



Is it real?



Donald J. Trump 
@realDonaldTrump

The concept of global warming was created by and for the Chinese in order to make U.S. manufacturing non-competitive.

64.7K 9:15 PM - Nov 6, 2012

109K people are talking about this >



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A few facts about this IPCC (GIEC) report

- Not original research: a review of existing work by scientists all over the world
- 5 chapters, 91 authors from 40 countries, 6,000 publications reviewed, 42,000 comments (all addressed)

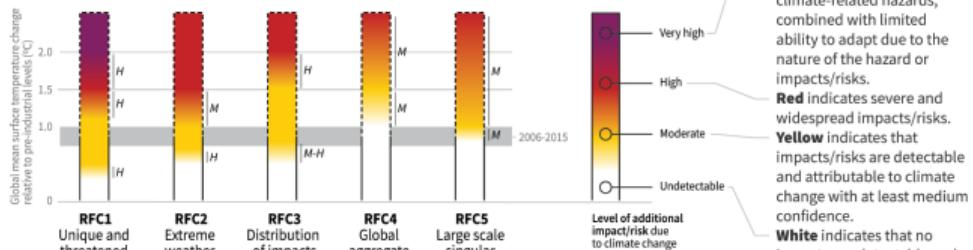
A must-see presentation: https://youtu.be/TYtBeWSnE_o



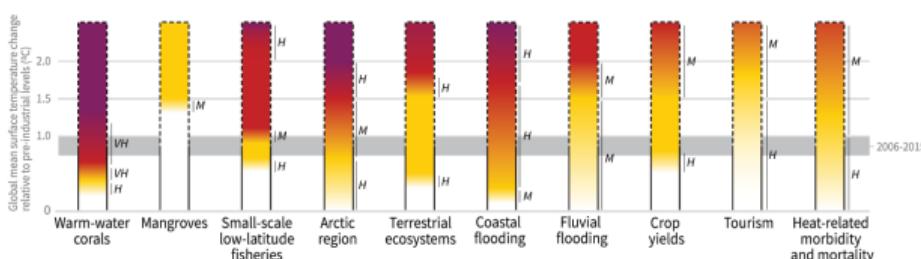
Is it serious? (IPCC aka GIEC report)

Five Reasons For Concern (RFCs) illustrate the impacts and risks of different levels of global warming for people, economies and ecosystems across sectors and regions.

Impacts and risks associated with the Reasons for Concern (RFCs)



Impacts and risks for selected natural, managed and human systems



Purple indicates very high risks of severe impacts/risks and the presence of significant irreversibility or the persistence of climate-related hazards, combined with limited ability to adapt due to the nature of the hazard or impacts/risks.

Red Indicates severe and widespread impacts/risks.

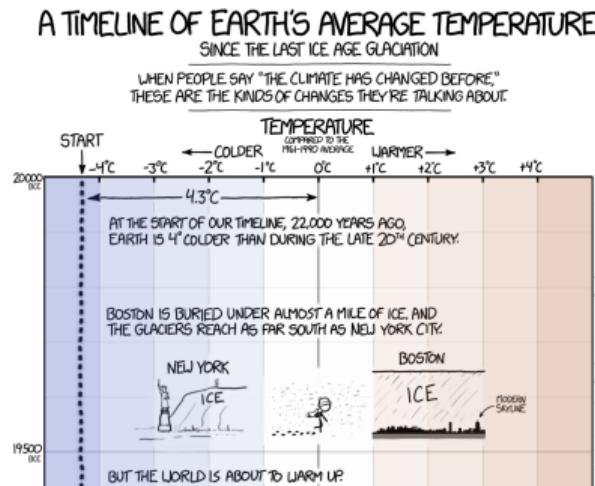
Yellow indicates that impacts/risks are detectable and attributable to climate change with at least medium confidence.

White indicates that no impacts are detectable and attributable to climate change.

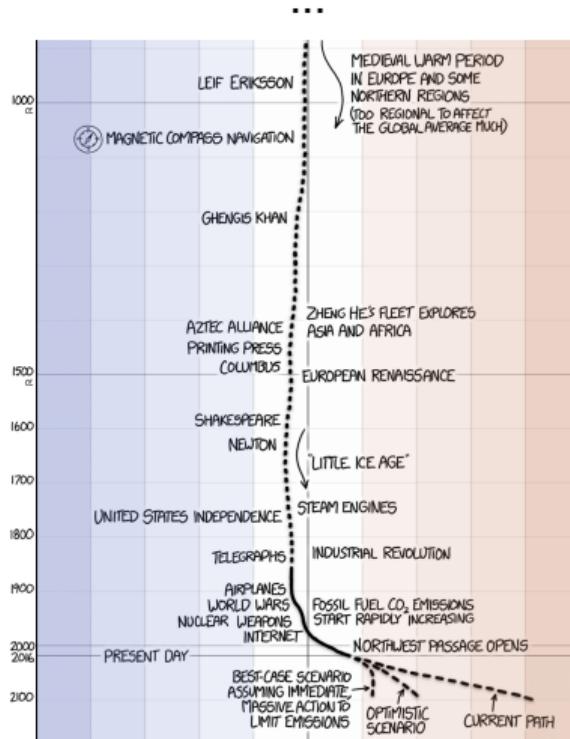
⇒ Every tenth of °C matters!

No, really, 1.5 °C is not much, right?

- Oceans have huge inertia and are less impacted. Land $\approx 30\%$ of earth surface.
Situation in 2015: Land = +1.53 °C, global = +0.87 °C (Source: "Climate Change and Land" IPCC report).
- Look at past evolution:



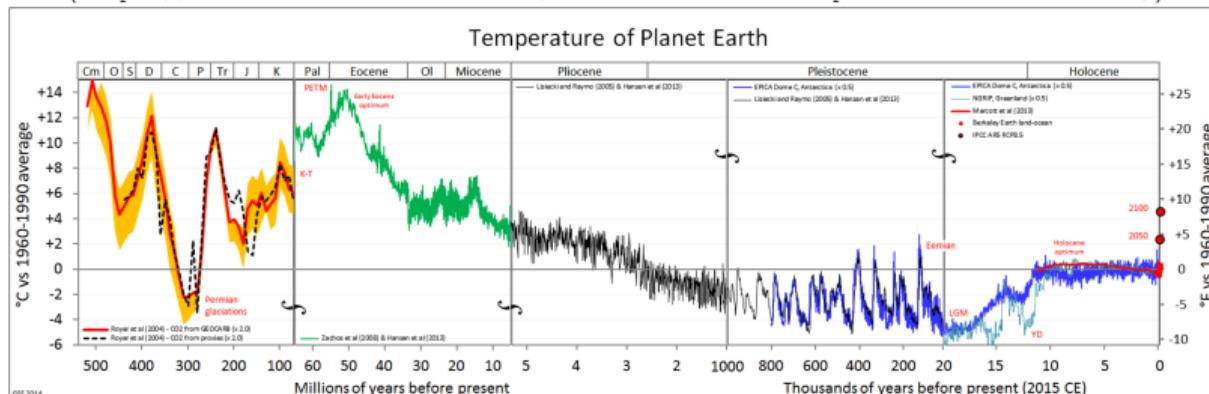
No, really, 1.5 °C is not much, right?



A More Scientific View?

“Si on remonte le temps, la notion de quatrième année la plus chaude JAMAIS enregistrée devient nettement moins pertinente...”

(<https://www.climato-realistes.fr/le-mentir-vrai-exemples-autour-du-climat/>)



Reminder:

- Mankind is about 6 million years Old
- Dinosaurs disappeared 65 million years ago
- (Log scales are very misleading ...)

Energy units: Orders of magnitude

- 1 Kg CO₂ = 0.4 liters gasoline \lesssim 10 Km by car¹
- 1 Kg CO₂ = 10 kWh (France) or 1 kWh (using coal) \approx 1 month using a laptop 6h/day (France)²
- 1 person = 12 tons CO₂/year (France)³

¹<https://calculis.net/co2>

²<https://www.greenit.fr/2009/04/24/combien-de-co2-degage-un-1-kwh-electrique/>

³<https://e-rse.net/emissions-CO2-francais-empreinte-carbone-271641/>

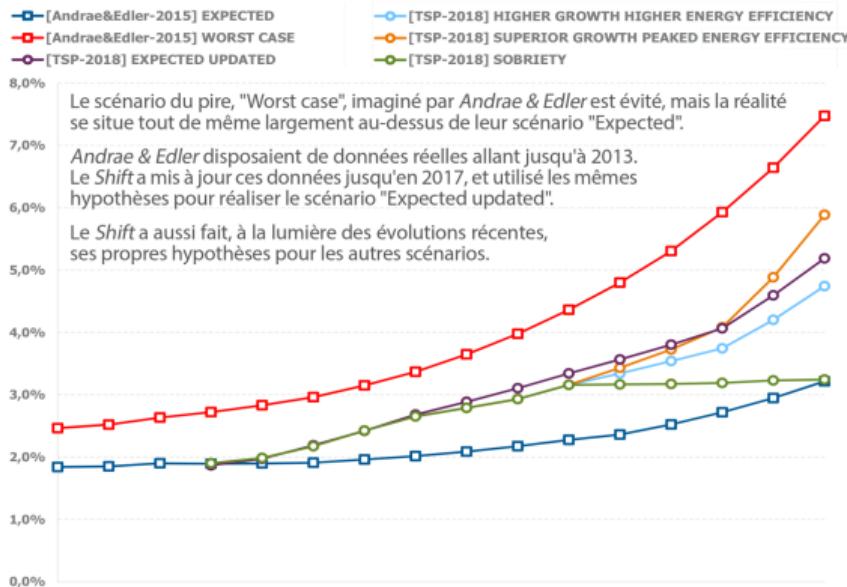


Energy Units: if You Prefer Money to Physics

- 1 Kg CO₂ = 0.4 liters gasoline ≈ 0.5 €
- 1 Kg CO₂ = 10 kWh (France) = 1.55 €(EDF rate)
- 1 person = 12 tons CO₂/year (France) ≈ 5-18 k€/year spent on energy (rough estimate)
- Another easy-to-remember number: 1 Watt ≈ 1€/year (1Watt*24h*365d*0.155 = 1.35€/y)



Power Consumption of Digital



Le scénario du pire, "Worst case", imaginé par Andrae & Edler est évité, mais la réalité se situe tout de même largement au-dessus de leur scénario "Expected".

Andrae & Edler disposaient de données réelles allant jusqu'à 2013. Le Shift a mis à jour ces données jusqu'en 2017, et utilisé les mêmes hypothèses pour réaliser le scénario "Expected updated".

Le Shift a aussi fait, à la lumière des évolutions récentes, ses propres hypothèses pour les autres scénarios.

- $\approx 2\%$ of global carbon footprint
- Same carbon footprint as civil aviation
- $\approx +8\%/\text{year}$ increase, doubles every 9 years.
- Think of what will happen if/when every 7.5 billion human will want laptop + tablet + smartphone + ...

[Source : scénarios et calculs The Shift Project 2018, à partir de Andrae & Edler 2015]

<https://theshiftproject.org/lean-ict/>

Fact-checking The Shift Project

FACTCHECKS

Factcheck: What is the carbon footprint of streaming video on Netflix?

The figures come from a [July 2019 report](#) by the [Shift Project](#), a French thinktank, on the “unsustainable and growing impact” of online video. The report said streaming was responsible for more than 300m tonnes of CO₂ (MtCO₂) in 2018, equivalent to [emissions from France](#).

The Shift Project’s report continues to influence media coverage, including articles published earlier this month by the [Guardian](#) and [Thomson Reuters Foundation](#).

The Shift Project’s “3.2kgCO₂ per hour” estimate is around eight times higher than a [2014 peer-reviewed study](#) on the energy and emissions impacts of streaming video.



Glossary

CO₂ EQUIVALENT STREAMING

That 2014 study found streaming in the US in 2011 emitted 0.42kgCO₂e per hour on a lifecycle basis, including “embodied” emissions from manufacture



Fact-checking The Shift Project

FACTCHECKS Factcheck: What is the carbon footprint of streaming video on Netflix?

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THE SHIFT PROJECT
THE CARBON TRANSITION THINK TANK

Who are we ? ▾ Current projects ▾ Publications ▾ Our

The S **DID THE SHIFT PROJECT REALLY OVERESTIMATE THE CARBON FOOTPRINT OF ONLINE VIDEO? OUR ANALYSIS OF THE IEA AND CARBONBRIEF ARTICLES**

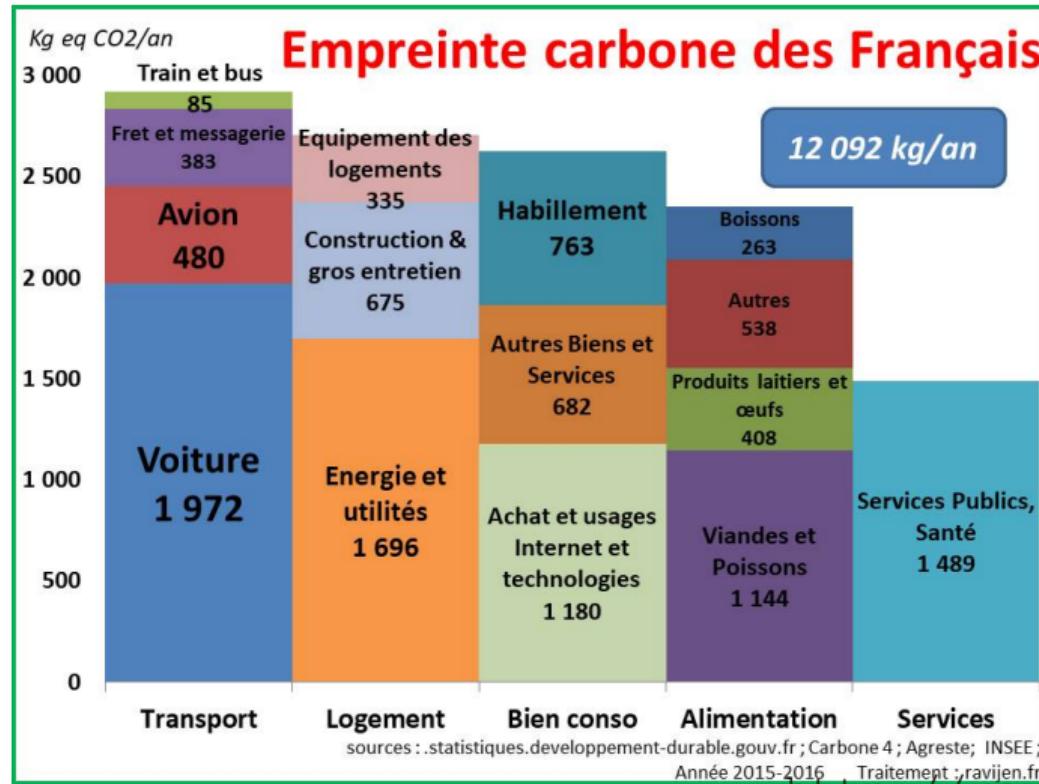
The S 15 June 2020
2014

Share: [f](#) [t](#) [in](#) [g](#)

In a nutshell: An analysis published in March correctly pointed out an error by *The Shift Project* regarding the climate footprint of online video. This error appeared during an interview. It has no impact on the results published in our reports, which are not contested. Here is our detailed explanation. We call for further scientific discussion.



In France



Impact of Digital

- Immediate impact
 - ▶ I use a computer, it consumes electricity
- Direct impact
 - ▶ I use a computer to surf the net ⇒ routers and servers consume electricity
 - ▶ My computer was manufactured ⇒ it consumed energy
- Indirect impact
 - ▶ I use Internet, it changes my behavior (online shopping Vs shops, ...)
- Long term impact
 - ▶ Digital is changing society



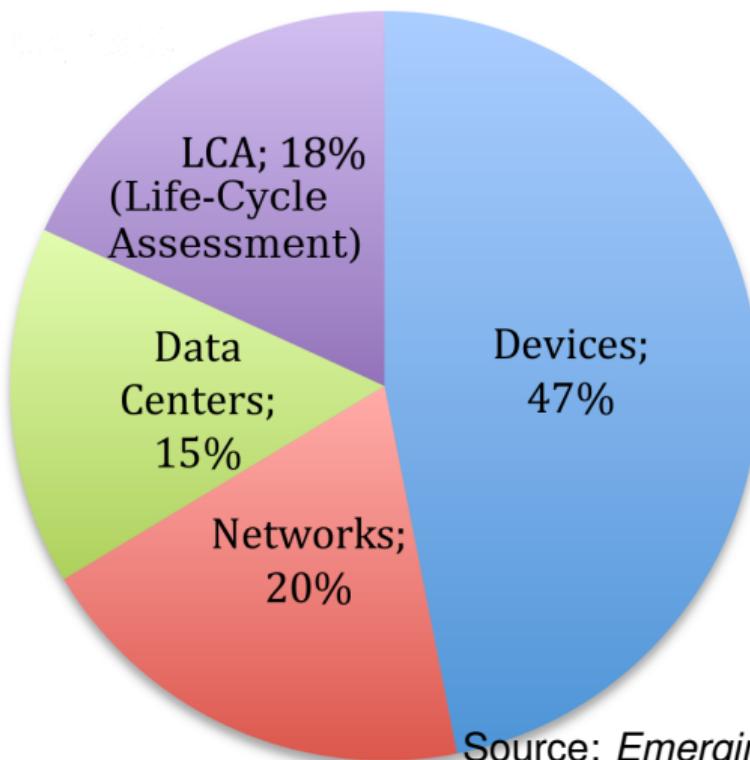
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Let's look at Immediate Vs Direct

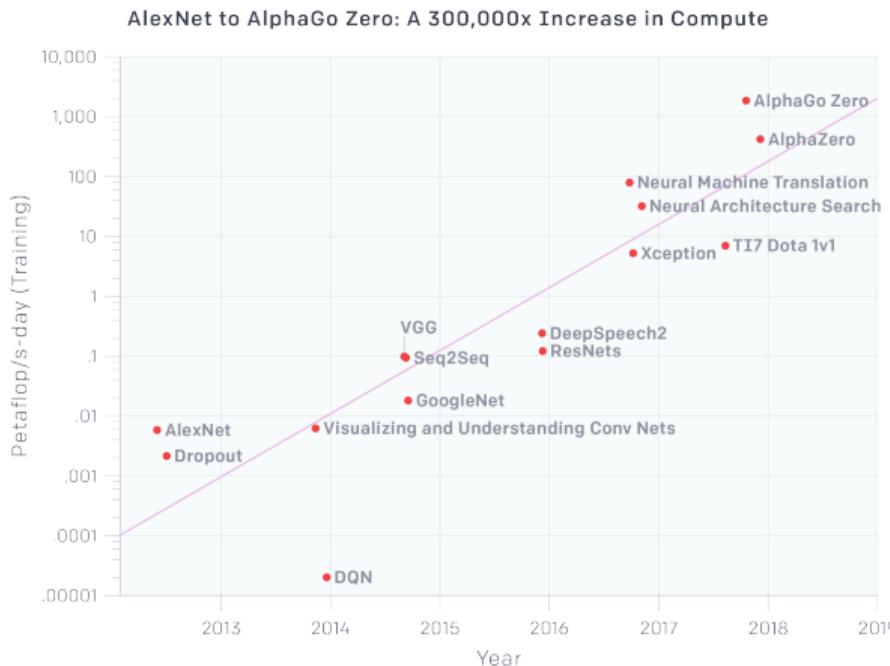


Electric Consumption Distribution for Digital Equipment



- More than half consumption “hidden”
- Trend:
 - ▶ direct consumption less than 1/3
 - ▶ data-center + network $\approx 1/2$
 - ▶ LCA remains approximately the same

Energy Consuming Example: AI



- FLOPS to train a model at Google doubles every 3.5 months
- Power efficiency doesn't follow
⇒ exponential growth of power consumption

Source: <https://openai.com/blog/ai-and-compute/>

Energy Consuming Example: BitCoin

- Principle of BitCoin
 - ▶ Global registry of transactions shared by many machines
 - ▶ Participants compute cryptographic hashes
- ≈ 7 transactions per second (worldwide)!
- 1 transaction = 288 kg CO₂ \approx 20 days of power supply of an average US household
- Total consumption = 0.33 % of worldwide energy \approx electricity consumption of Austria

Source: <https://digiconomist.net/bitcoin-energy-consumption>



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Indirect impact: can digital save energy?



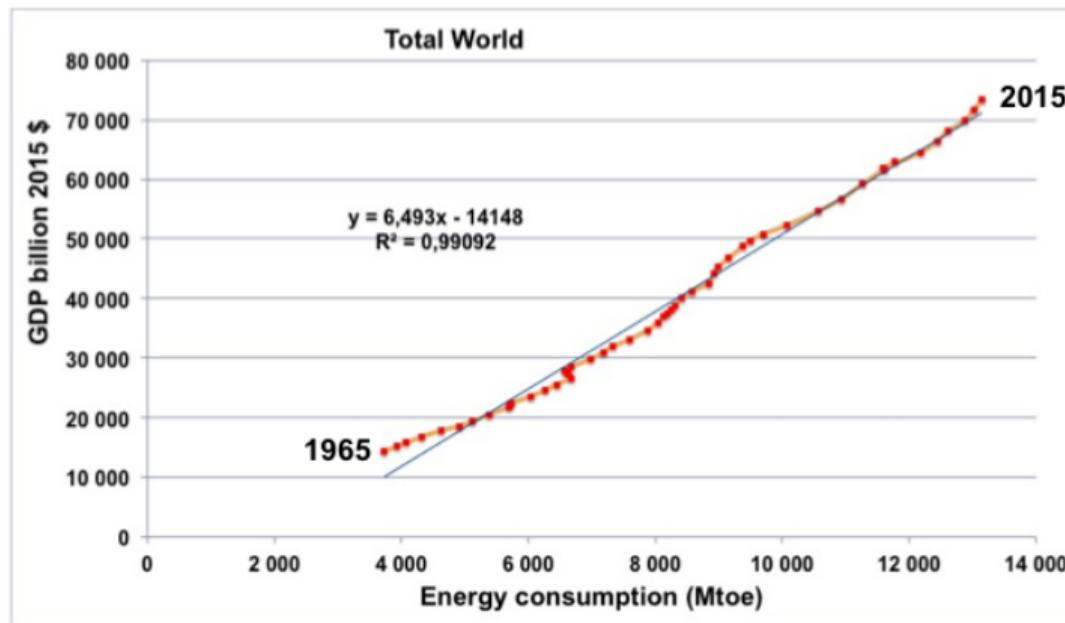
Digital = Solution or Problem?

Digital ⇒
More \$\$ invested in eco-friendly
projects

?



Money Vs Energy Consumption



Energie consommée (en abscisse) et PIB en dollars constants (ordonnée) pour le monde, de 1965 à 2015. Données World Bank pour le PIB et BP stat pour l'énergie

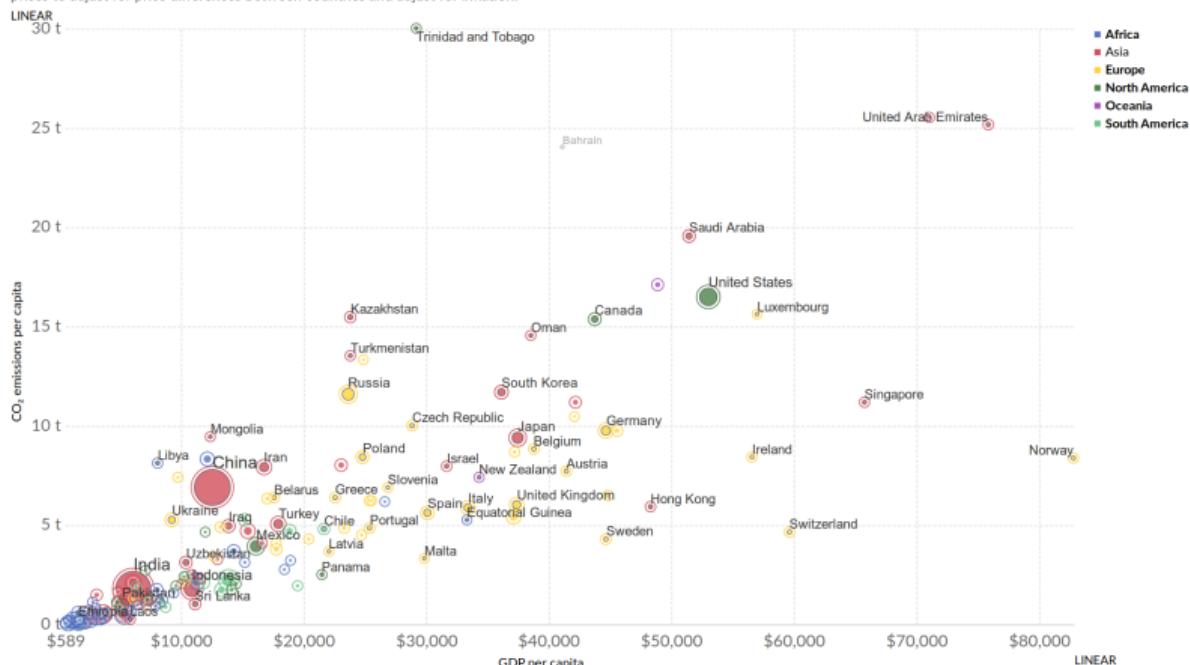
Source:
Top 100

<https://jancovicici.com/transition-energetique/l-energie-et-nous/lenergie-de-quoi-sagit-il-exactement/>

Money Vs CO₂ Emissions

CO₂ emissions per capita vs GDP per capita, 2016

Carbon dioxide (CO₂) emissions per capita are measured in tonnes per person per year. Gross domestic product (GDP) per capita is measured in international-\$ in 2011 prices to adjust for price differences between countries and adjust for inflation.



Source:
OurWorldInData.org

Source: Global Carbon Project; Maddison (2017)

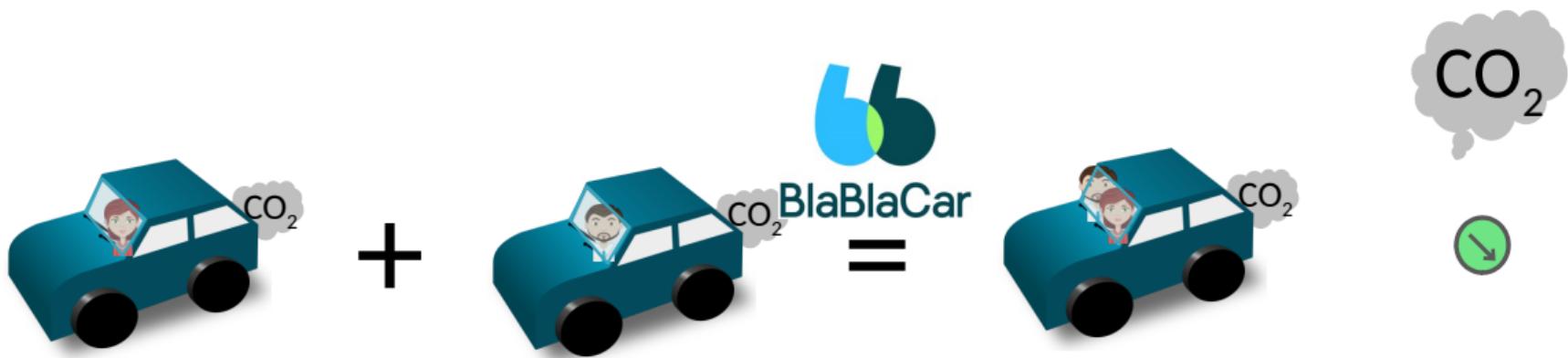
<https://ourworldindata.org/grapher/co2-and-other-greenhouse-gas-emissions/> • CC BY

Et l'effet rebond ?

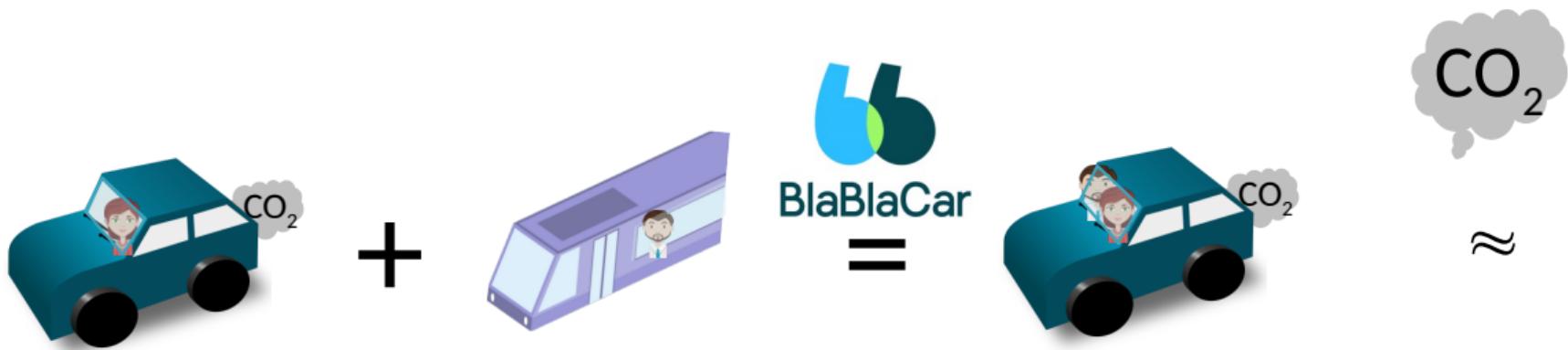
(Slides by Jacques Combaz,
Verimag, Grenoble / Groupe EcoInfo CNRS)



Exemple du covoiturage



Exemple du covoiturage



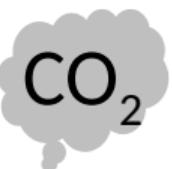
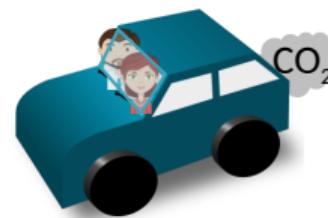
Exemple du covoiturage



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Exemple du covoiturage

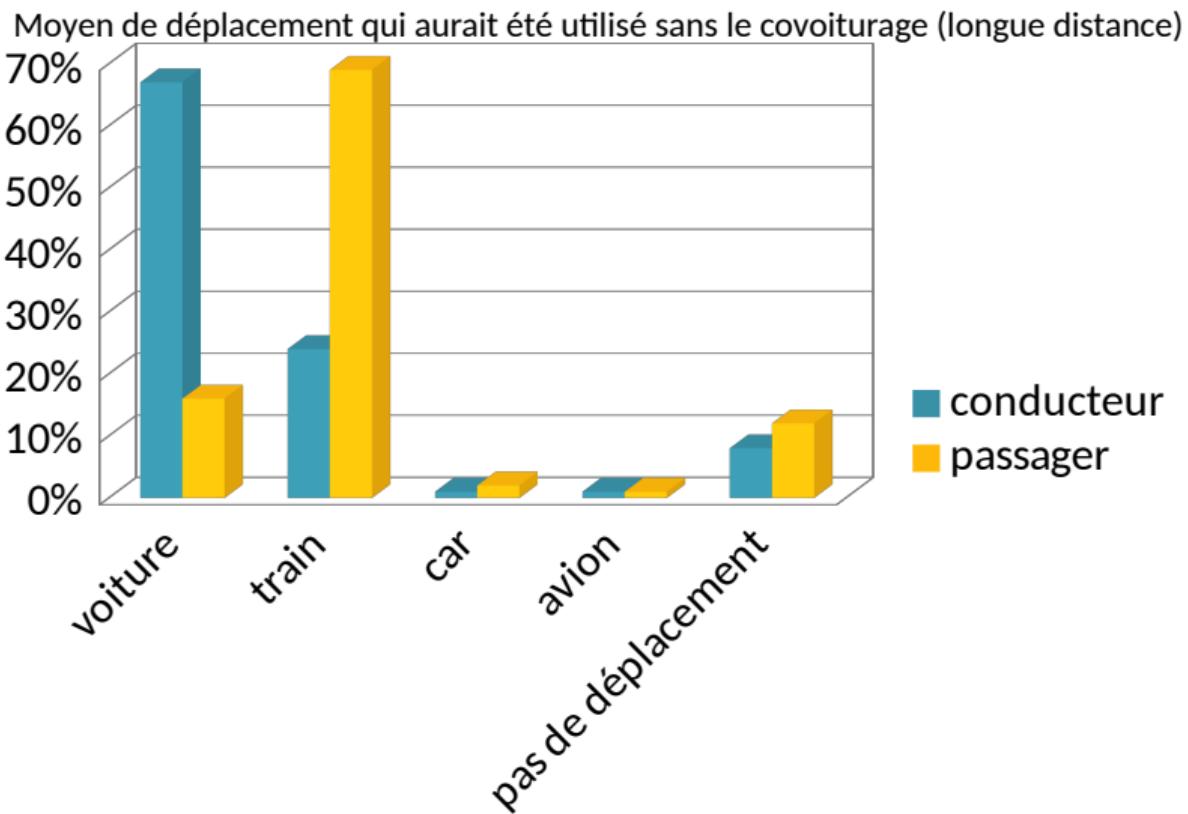


BlaBlaCar

Trajet moyen : 364 km

Motivations principales :

- économies 69 %
- convivialité 87 %



Exemple du covoiturage

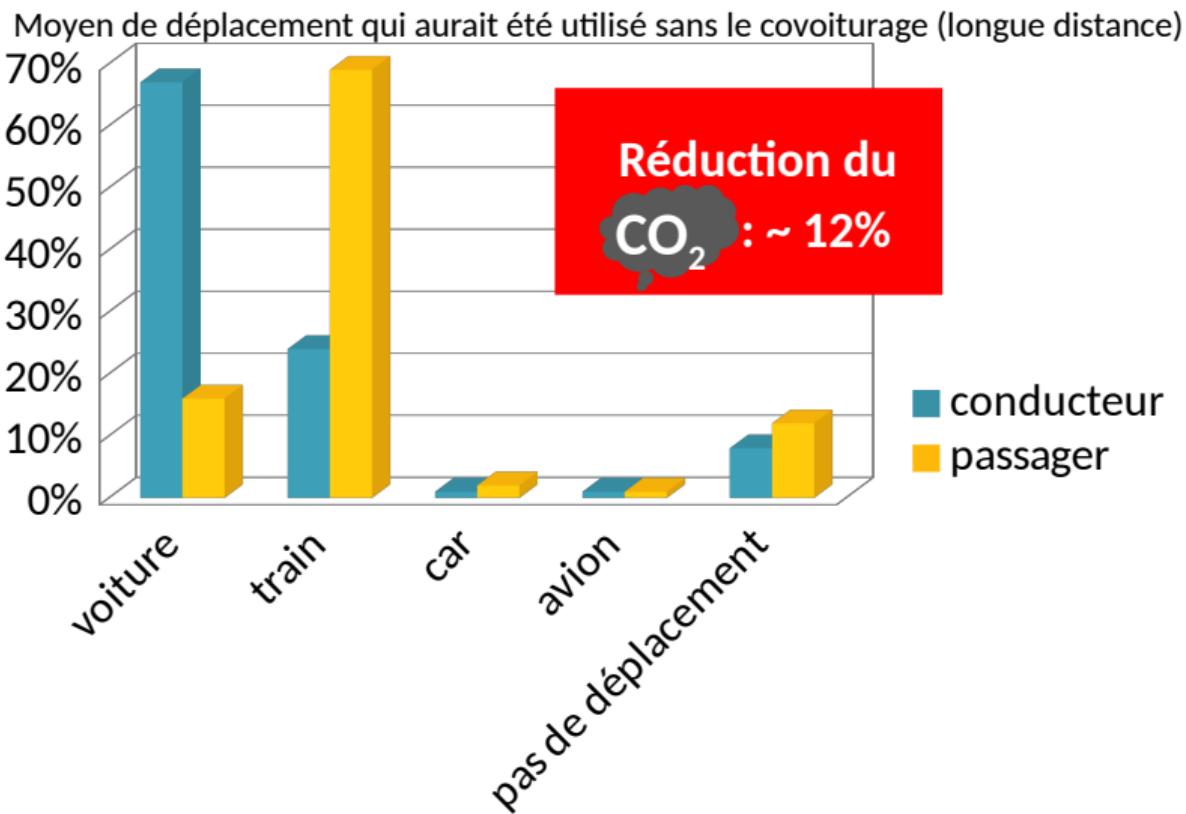


BlaBlaCar

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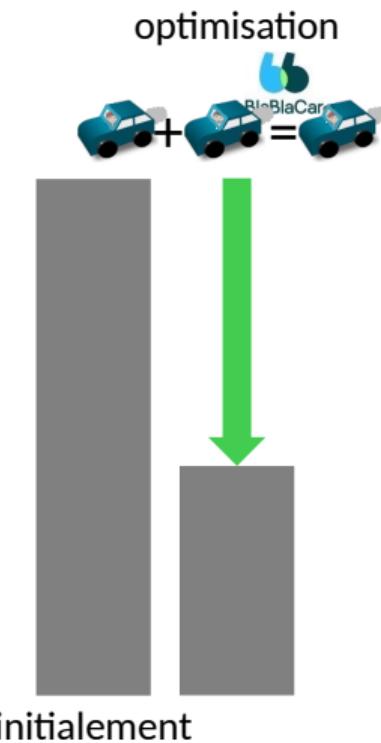


Covoiturage : attention aux effets rebond

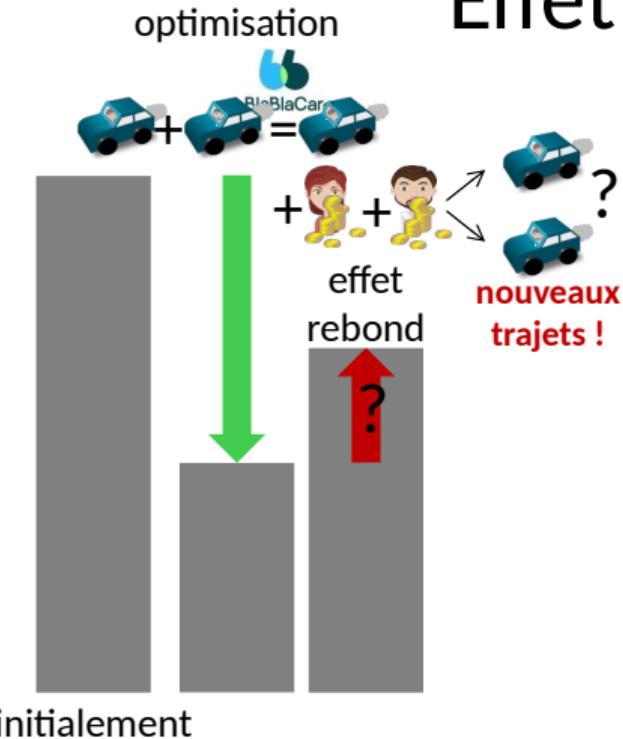


Nouveaux trajets !
pas pris en compte dans le
calcul des 12 % de réduction de CO₂

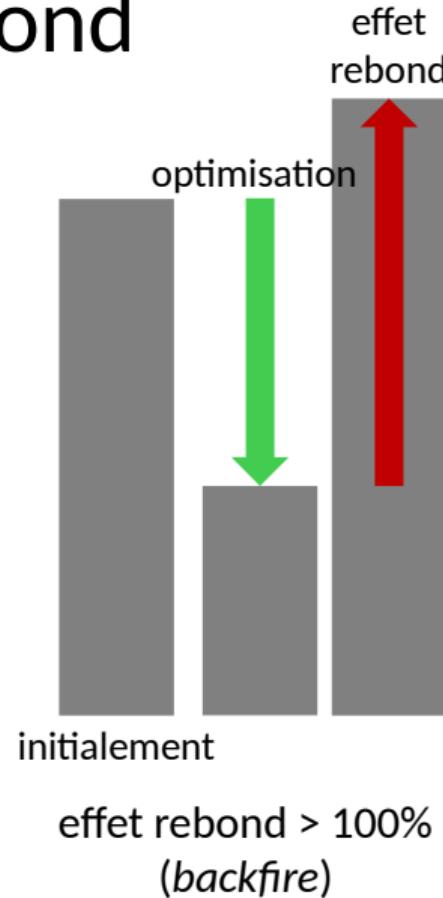
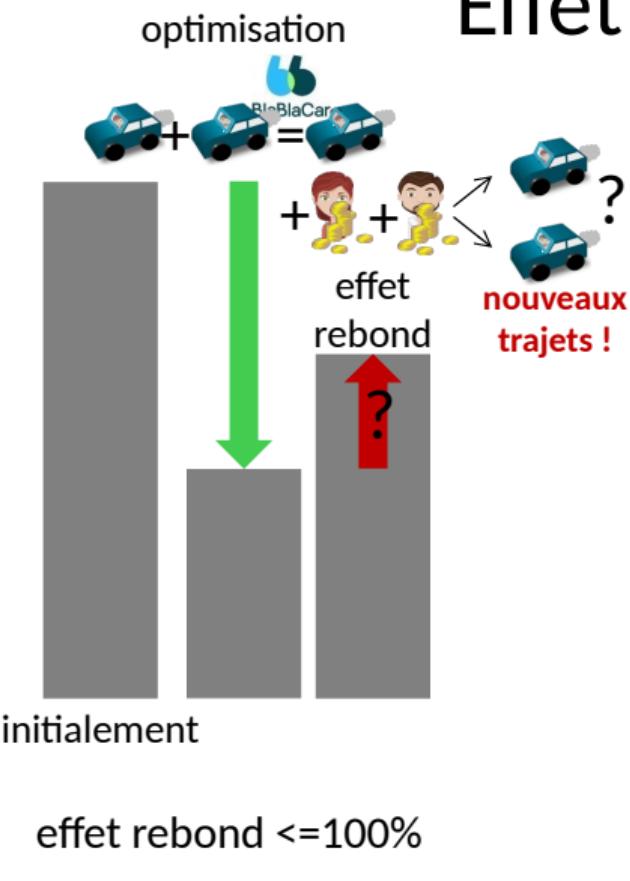
Effet rebond



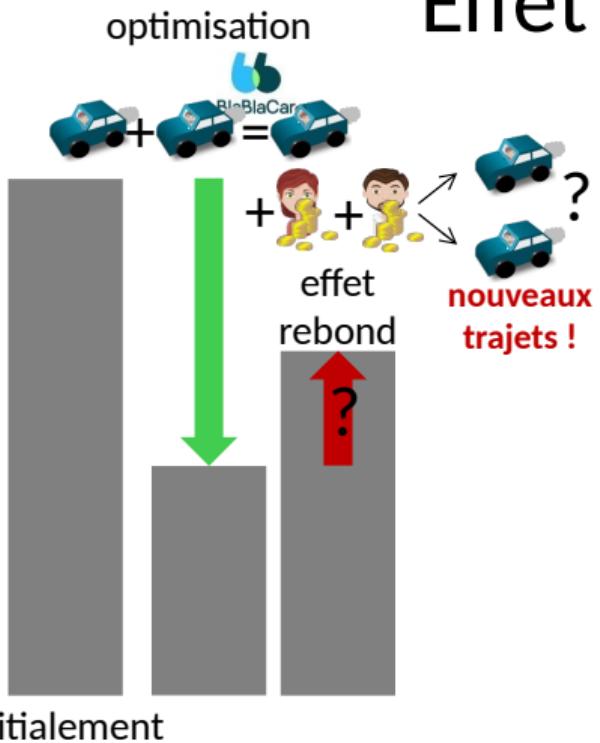
Effet rebond



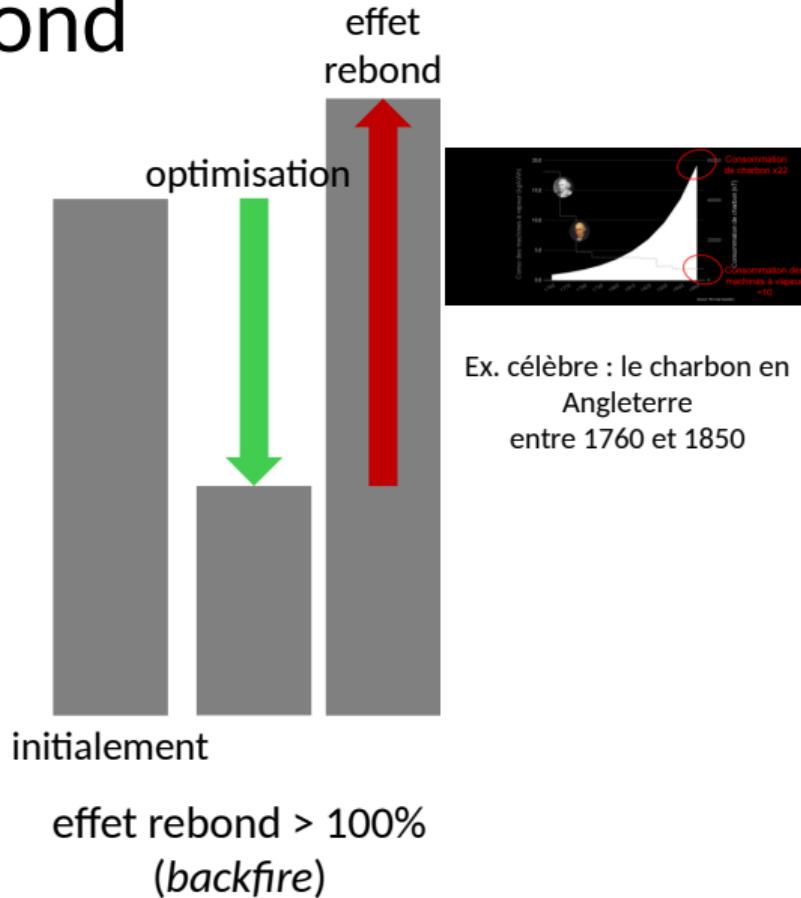
Effet rebond



Effet rebond



effet rebond $\leq 100\%$



Effet rebond ?



Dans un système en croissance, tous les gains en efficacité sont réinvestis...
Le numérique facilite et amplifie ce processus

Impact of Digital

- Immediate impact
 - ▶ I use a computer, it consumes electricity
- Direct impact
 - ▶ I use a computer to surf the net ⇒ routers and servers consume electricity
 - ▶ My computer was manufactured ⇒ it consumed energy
- Indirect impact
 - ▶ I use Internet, it changes my behavior (online shopping Vs shops, ...)
- Long term impact
 - ▶ Digital is changing society



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- Long term impact
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Long term impact: very hard to predict!



Good reads

- **La face cachée du numérique,**
<https://www.ademe.fr/face-cachee-numerique>
- **The Shift Project**, <https://theshiftproject.org/lean-ict/>
- <https://jancovici.com/>



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Outline of this section

- 3 Minorities and Computer Science
 - Can Computer Programs be Racist?
 - Are Developers Sexist?



Racisme et tech I



<https://www.youtube.com/watch?v=t4DT3tQagRM>

Racisme et tech II

diri noir avec banan
@jackyalcine

Follow

Google Photos, y'all [REDACTED] up. My friend's not a gorilla.

Skyscrapers Airplanes Cars

Bikes Gorillas Graduation

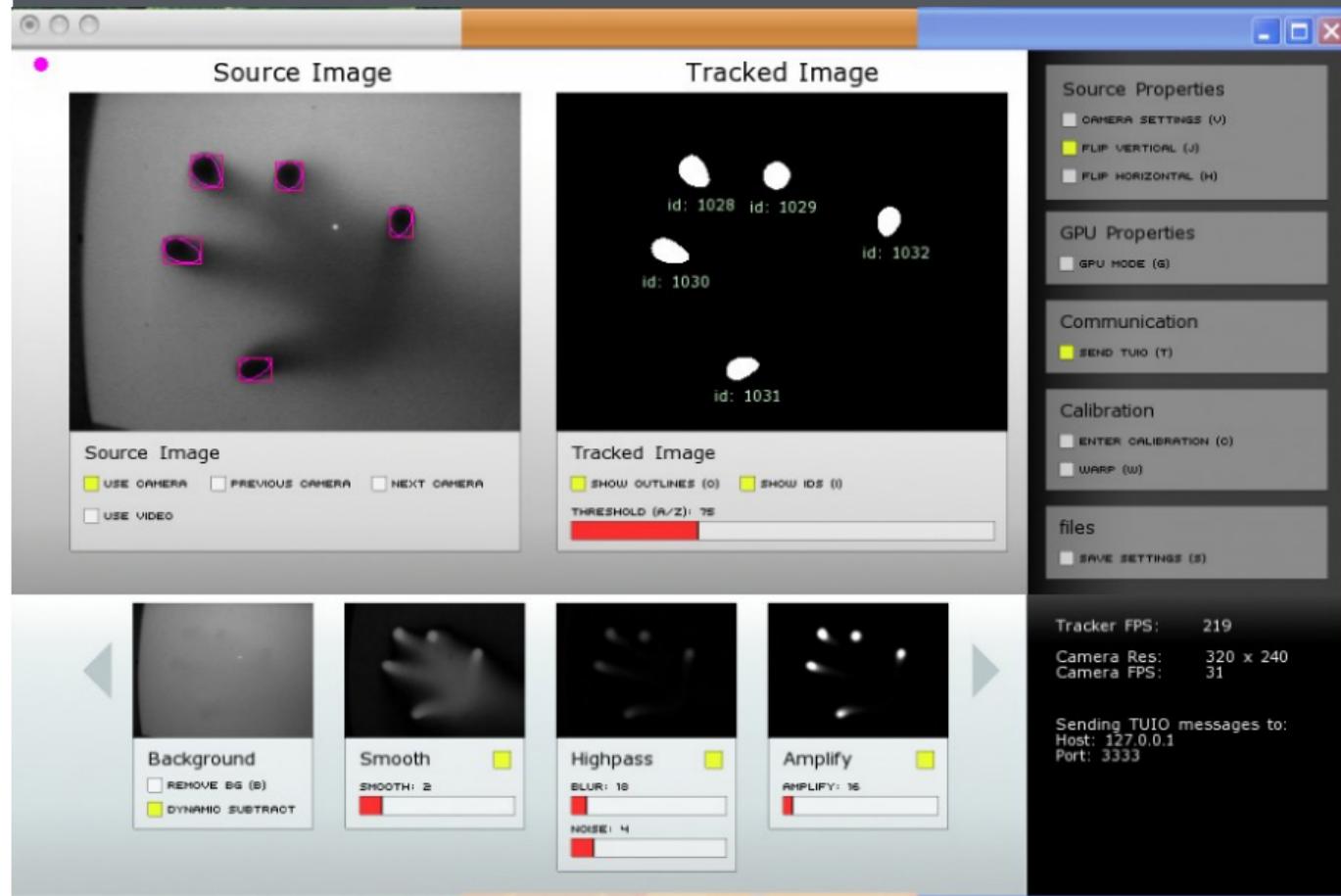
RETWEETS 226 FAVORITES 85

6:22 PM - 28 Jun 2015



<https://gizmodo.com/why-cant-this-soap-dispenser-identify-dark-skin-1797931773>







6:31

[+ Queue](#)[Download](#)[Embed](#)[Transcript](#)

How Kodak's Shirley Cards Set Photography's Skin-Tone Standard

November 13, 2014 · 3:45 AM ET

Heard on [Morning Edition](#)

MANDALIT DEL BARCO

Jersson Garcia works at Richard Photo Lab in Hollywood. He's 31 years old, and he's got a total crush on Shirley.

"Beautiful skin tones, beautiful eyes, great hair," he sighs. "She's gorgeous."

Garcia is holding a 4-by-6-inch photo of an ivory-faced brunette wearing a lacy, white, off-the-shoulders top. She has red lipstick and silver earrings, and the photo appears to have been taken sometime in the 1970s or '80s.

For many years, this "Shirley" card — named for the original model, who was an employee of Kodak — was used by photo labs to calibrate skin tones, shadows and light during the printing process.

"She was the standard," Garcia says, "so whenever we printed anything, we had to pull Shirley in. If Shirley



For decades, Kodak's Shirley cards, like this one, featured only white models.

Kodak

Face Recognition and Skin Color

Google reportedly targeted people with 'dark skin' to improve facial recognition

Subcontracted workers were told to persuade subjects to agree to face scans, mischaracterizing them as a 'selfie game' or 'survey'



▲ A report from the New York Daily News says Google was using deceptive practices to collect face scans.
Photograph: Jeff Chiu/Associated Press

Facial recognition technology's failures when it comes to accurately identifying people of color have been **well documented** and **much criticized**. But an attempt by Google to improve its facial recognition algorithms by collecting data from people with dark skin is raising further concerns about the ethics of the data harvesting.

Google has been using subcontracted workers to collect face scans from

Source: <https://www.theguardian.com/technology/2019/oct/03/google-data-harvesting-facial-recognition-people-of-color>

Outline of this section

- 3 Minorities and Computer Science
 - Can Computer Programs be Racist?
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4:33

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When Women Stopped Coding

October 21, 2014 · 8:54 AM ET

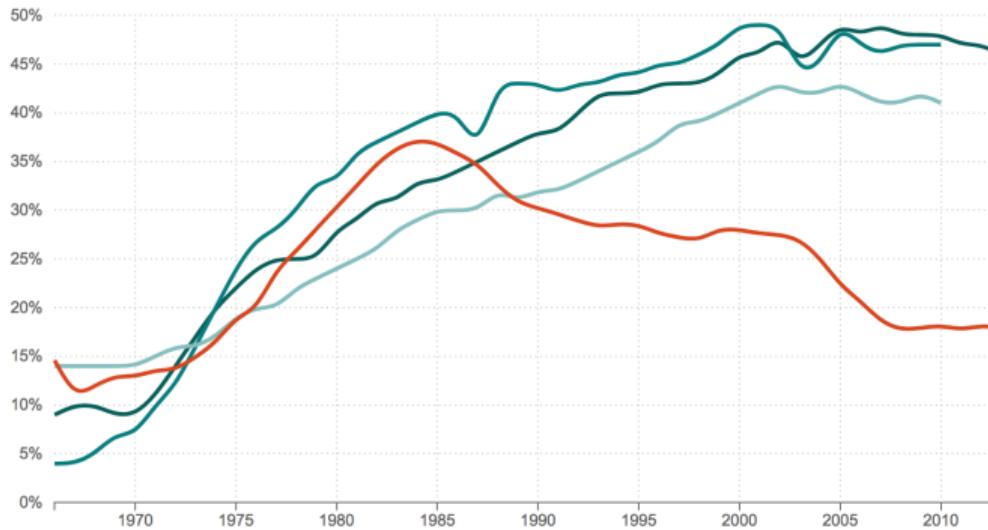
Heard on [Morning Edition](#)

STEVE HENN

What Happened To Women In Computer Science?

% Of Women Majors, By Field

- Medical School
- Law School
- Physical Sciences
- Computer science



Ada Lovelace
1e algo exécuté



Margaret Hamilton
lead dev. sur Apollo



Grace Hopper
1e compilateur



Adele Goldberg
Smalltalk team

Stereotypes Today (1/2)



Stereotypes Today (2/2)



Stereotypes Vs Hard Data

<https://phys.org/news/2017-05-gender-bias-open-source.html>

- How good are women in development? One measure: acceptance ratio of pull-requests on GitHub.

♂: 74.6 %

♀: 78.7 %

Conclusion 1: *women are better coders*



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- Hmm, let's have a closer look. Acceptance ratio for developers outside the project:

♂: 61 % ♀: 58 %

Conclusion 2: actually, *men are better coders*, insiders get their code merged thanks to their non-coding skills (?)



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- Wait, how do you know they were ♂/♀? Previous numbers=it's clear on their profile (picture, name, ...). Gender-neutral profiles:

♂: 65 % ♀: 70 %

- Final conclusion: *gender bias does exist* in open-source programming :-(.



About Sexism in Developers Communities: the Linux Kernel

- Frankness/Directness or Insulting/Sexist ...

- ▶ Linus Torvalds: *I fart in your general direction and call your mother a hamster.*
 - ▶ Linus Torvalds: *the patches are COMPLETE AND UTTER GARBAGE. [...] WHAT THE F*CK IS GOING ON?*



- Not everybody finds it funny:

- ▶ Sarah Sharp: *I need communication that is technically brutal but personally respectful. I need people to correct my behavior when I'm doing something wrong (either technically or socially) without tearing me down as a person.*

(<http://sarah.thesharps.us/2015/10/05/closing-a-door/>)

- ▶ Linus Torvalds: *My flippant attacks in emails have been both unprofessional and uncalled for. Especially at times when I made it personal. [...] I need to change some of my behavior*

(<http://lkml.iu.edu/hypermail/linux/kernel/1809.2/00117.html>)

Little Things You Can Do

- (Obviously: be nice to everybody)
- Use gender-neutral formulation (“The user clicks OK, then he does”)
- Avoid slang (especially below-the-belt one) when unsure how it will be taken
- Enforce/follow a code of conduct. Example

(<https://opensource.guide/code-of-conduct/>):

Why do I need a code of conduct?

A code of conduct is a document that establishes expectations for behavior for your project’s participants. [...]

A code of conduct empowers you to facilitate healthy, constructive community behavior. Being proactive reduces the likelihood that you, or others, will become fatigued with your project, and helps you take action when someone does something you don’t agree with.



Miscellaneous

- “Apple Card: La carte de paiement accusée d'être sexiste”

[https://www.20minutes.fr/high-tech/](https://www.20minutes.fr/high-tech/2648287-20191110-apple-card-carte-paiement-accusee-etre-sexiste)

2648287-20191110-apple-card-carte-paiement-accusee-etre-sexiste



Being Inclusive in Communications

- Wording matters...



Being Inclusive in Communications

- Wording matters...
- Master / Slave ~ Primary / Secondary, or Initiator / Target, ...



Being Inclusive in Communications

- Wording matters...
- Master / Slave ~ Primary / Secondary, or Initiator / Target, ...

The screenshot shows a BBC News article titled "GitHub abandons 'master' term to avoid slavery row". The article is dated 15 June 2020. Below the title is a photograph of a smartphone screen displaying the GitHub logo.

BBC | Sign in

News Sport Reel Worklife Travel Future More

NEWS

Home | US Election | Coronavirus | Video | World | UK | Business | Tech | Science | Store

Technology

GitHub abandons 'master' term to avoid slavery row

15 June 2020

f t e Share



Being Inclusive in Communications

- Wording matters...
- Master / Slave ~ Primary / Secondary, or Initiator / Target, ...
- Blacklist / Whitelist (cf. Black Lives Matter in 2020) ~ Blocklist / Allowlist

```
https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git/commit/index_2657a55c6f120..1bee6f8affdb8 100644
--- a/Documentation/process/coding-style.rst
+++ b/Documentation/process/coding-style.rst
@@ -319,6 +319,26 @@ If you are afraid to mix up your local variable names
 problem, which is called the function-growth-hormone-imbalance syndrome.
 See chapter 6 (Functions).

+For symbol names and documentation, avoid introducing new usage of
+'master / slave' (or 'slave' independent of 'master') and 'blacklist /
+whitelist'.
+
+Recommended replacements for 'master / slave' are:
+  '{primary,main} / {secondary,replica,subordinate}'
+  '{initiator,requester} / {target,responder}'
+  '{controller,host} / {device,worker,proxy}'
+  'leader / follower'
+  'director / performer'
+
+Recommended replacements for 'blacklist/whitelist' are:
+  'denylist / allowlist'
+  'blocklist / passlist'
+
+Exceptions for introducing new usage is to maintain a userspace ABI/API,
+or when updating code for an existing (as of 2020) hardware or protocol
+specification that mandates those terms. For new specifications
+translate specification usage of the terminology to the kernel coding
+standard where possible.
```



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Male

Composite heterosexual faces

Composite gay faces

Average facial landmarks

INDY/TECH

ARTIFICIAL INTELLIGENCE CAN IDENTIFY 'GAY FACES' FROM A PICTURE, STUDY CLAIMS

● gay

● straight

What's the issue?

- It can't work?

What's the issue?

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Yes it does, 71-81% success, much better than humans!



What's the issue?

- It can't work?
Yes it does, 71-81% success, much better than humans!
- CS Research should be validated by an ethics committee (like medical research)

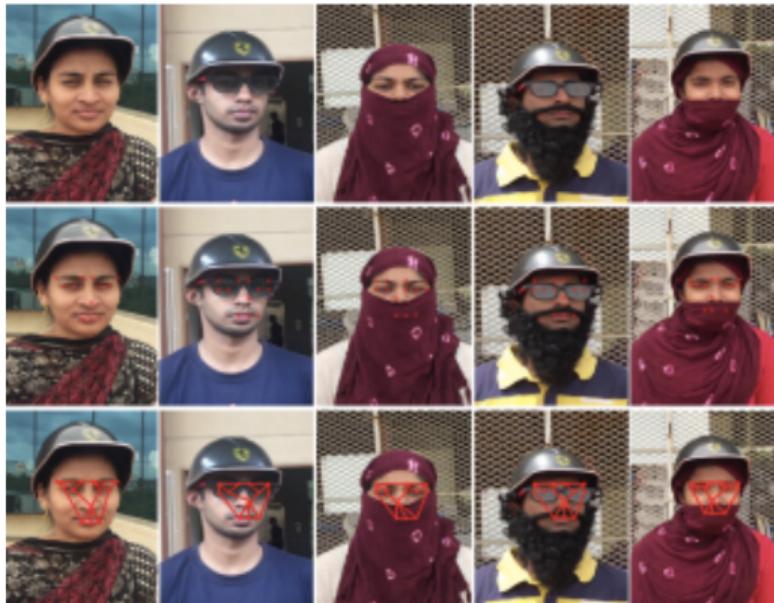


What's the issue?

- It can't work?
Yes it does, 71-81% success, much better than humans!
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It was: “Right now, if government-funded scientists want to research humans for a study, the law requires them to get the approval of an ethics committee known as an institutional review board, or IRB. Stanford’s review board approved Kosinski and Wang’s study. But these boards use rules developed 40 years ago for protecting people during real-life interactions, such as drawing blood or conducting interviews. “The regulations were designed for a very specific type of research harm and a specific set of research methods that simply don’t hold for data science,” says Metcalf.” <https://www.wired.com/story/ai-research-is-in-desperate-need-of-an-ethical-watchdog/>



Reconnaissance de visages masqués



Les humains derrière le machine learning

Et derrière les bots, le labelling de photos,
et pleins d'autres "IA"

L'IA est aujourd'hui grandement basée sur les données :

- ▶ Il faut produire des jeux de données propre
- ▶ Il faut entraîner les algorithmes
- ▶ Il faut avoir des palliatifs en cas de problèmes

Everything Can be Bought, Even Artificial Intelligence



<https://www.figure-eight.com/>

Everything Can be Bought, Even Artificial Intelligence



Amazon Mechanical Turk (MTurk) operates a marketplace for work that requires human intelligence. The MTurk web service enables companies to programmatically access this marketplace and a diverse, on-demand workforce. Developers can leverage this service to build human intelligence directly into their applications.

While computing technology continues to improve, there are still many things that human beings can do much more effectively than computers, such as identifying objects in a photo or video, performing data de-duplication, transcribing audio recordings or researching data details. Traditionally, tasks like this have been accomplished by hiring a large temporary workforce (which is time consuming, expensive and difficult to scale) or have gone undone.



<https://www.mturk.com/>

Microworkers (“Travailleurs du Clic”)



“The present research estimates that more than **260 000 people** perform, at least occasionally, micro-work **in France**”

<https://hal.archives-ouvertes.fr/hal-02139528>

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“43.5% of micro-workers between the ages of 25 and 64 hold at least a bachelor’s degree”

<https://hal.archives-ouvertes.fr/hal-02139528>

On a related topic...

Do we even need to talk about Uber/Deliveroo/... ?



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Qu'est ce qui ne va pas ?

We want to send you content that is relevant and useful to you. Choose from the below options and we'll make sure that you only receive content that you really want.

Email SMS Post

Offers, discounts and competitions

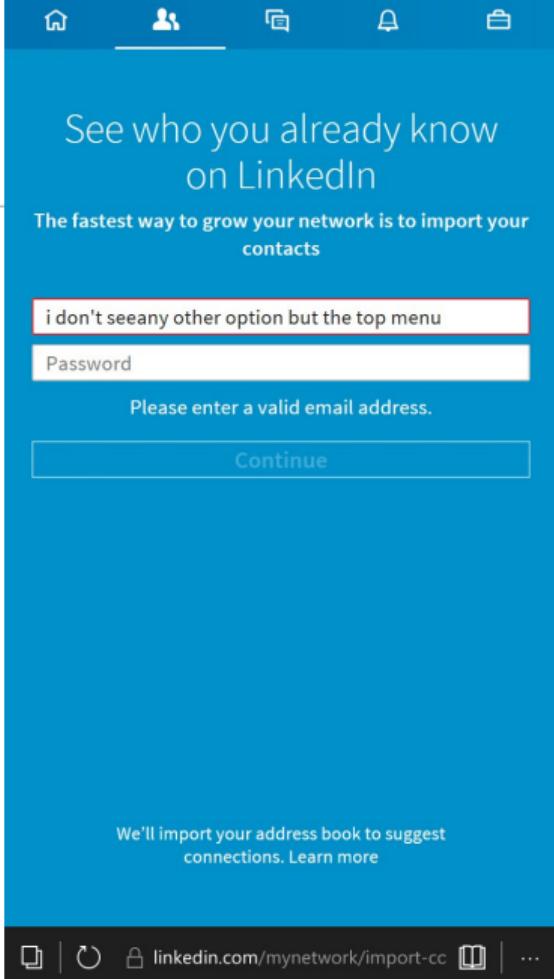
Newsletters and updates

Surveys and research

Add Lib lifestyle content

Unsubscribe from all

Save



More on dark patterns

- <https://www.darkpatterns.org/>
- Don't mention me if you use this website as actual patterns for your next website ;-).



How Uber Uses Psychological Tricks to Push Its Drivers' Buttons

The company has undertaken an extraordinary experiment in behavioral science to subtly entice an independent work force to maximize its growth.

By NOAM SCHEIBER and graphics by JON HUANG | APRIL 2, 2017

The secretive ride-hailing giant Uber rarely discusses internal matters in public. But in March, facing crises on multiple fronts, top officials convened a call for reporters to insist that Uber was changing its culture and would no longer tolerate “brilliant jerks.”

Notably, the company also announced that it would fix its troubled relationship with drivers, who have complained for years about falling pay and arbitrary treatment.

“We’ve underinvested in the driver experience,” a **senior official** said. “We are now re-examining everything we do in order to rebuild that love.”

<https://www.nytimes.com/interactive/2017/04/02/technology/uber-drivers-psychological-tricks.html>

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Your Project, StopCovid & Privacy

- Privacy = growing concern with the growth of mobile devices and networks
- This course is already full, maybe a part on that next year ;-)
- Your project = minimal simulator of StopCovid
(<https://www.economie.gouv.fr/stopcovid>)
- Your job in the report = discuss the stake behind contact-tracing apps:
 - ▶ Risks
 - ▶ Counter-measures, risk mitigation
 - ▶ Don't: try to find the one true answer, or try to make yourself an epidemiologist

