

This lecture... what we will cover

1. What will ENGR 399 be like? When will it meet? How is it graded?
2. Factual vs. conceptual vs. moral components of ethical issues
3. Factual considerations — must critically evaluate sources!
4. Does technology “have politics”?

There will be a graded in-class assignment due at the end of class

Course Instructors

Dr. Daniel Lacks (djl15@case.edu)

Vice Provost for Interdisciplinary and International Initiatives

C. Benson Branch Professor of Chemical Engineering

Office: Adelbert 216

Office hours: Thurs 11:30am-12:30pm

We're trying a unique approach!
Co-teaching to bring both
engineering and humanities
expertise

Dr. Émile Torres (ept24@case.edu)

Postdoctoral Researcher

Inamori International Center for Ethics and Excellence and Ethics

Office: Tinkham Veale 280

Office hours: Thurs 11:30am-12:30pm

Course Objectives

- Recognize the complexities of engineering solutions in various fields of engineering, from the underlying scientific and engineering principles to the potential societal impacts
- Apply ethical theories in the analysis of engineering projects
- Understand the viewpoints of others regarding disparate impacts of technology
- Address the consequences of engineering solutions in a global context

Our course is different than a humanities course... we'll address the technical basis to understand how the societal impacts follow



This is why we have Dr. Torres!



Engineering products and technology often lead to worse outcomes for some!



Almost every engineering project transcends national borders in some way



Week	Lecture*	Asynchronous
1	Tues Jan 14: Introduction to Ethics Thurs Jan 16: Factual-Conceptual-Moral	
2	Tues Jan 21: Highways	Async assignment 1
3	Tues Jan 28: Water Diversion	Async assignment 2
4	Tues Feb 4: Engineering Personal Ethics	Async assignment 3
5	Tues Feb 11: Safety and Risk – part 1	Async assignment 4
6	Tues Feb 18: Safety and Risk – part 2	Async assignment 5
7	Tues Feb 25: Intellectual Property – part 1	Async assignment 6
8	Tues Mar 4: Intellectual Property – part 2	
	Spring Break	
9	Tues Mar 18: Personal Finance (guest lecture)	Async assignment 7
10	Tues Mar 25: Art (guest lecture)	Async assignment 8
11	Tues Apr 1: Biomedical	Async assignment 9
12	Tues Apr 8: AI	Async assignment 10
13	Tues Apr 15: Environmental	Prep for final presentation
14	Tues Apr 22: Techno-Futuristic Ideologies in Silicon Valley	Final presentation

- Typically lectures only on Tuesdays (but schedule may vary, and a lecture may need to move to Thurs)
- Asynchronous content replaces Thurs lectures: you choose from options, select which best aligns with your interests

Course Grading

In-class assignments (12 @ 2.5% each):	30%	A: >90
Asynchronous assignments (10 @ 6% each):	60%	B: 80 to 90
Final presentation (video):	10%	C: 70 to 80 D: 60 to 70 F: <60

In-class assignments:

- Must be submitted in Canvas by the end of the class period (unless deadline changed by instructor).
- No opportunity for turning these assignments in late or for make-up assignments (except for conflict with official university activity)
- Lowest TWO scores dropped to allow for absences, bad days, etc.

Asynchronous assignments:

- Must be submitted in Canvas by the deadline to receive full credit
- Late assignments will be accepted, but with 50% penalty
- No scores are dropped

Accommodations—Contact Dr. Lacks

What will assignments be like, and how will they be graded?

- a) Assignments will be broken into small parts, where each part is graded as either 0 or 1 pt ... breaking the assignment into small parts is our way of doing a “pre-emptive partial credit” to make grading more consistent. Each part will be a short answer question (1-3 sentences)
- b) Course TAs will grade the assignments. The TAs are from Law, MSASS and the humanities
- c) Only the content of the answers will be considered in grading the assignments—the quality of writing will NOT be considered (however, for the final presentation the communication will be considered)
- d) Answers must only contain information that is from the appropriate source and that is relevant to the question, and the answers must use the same terminology as the source. Extraneous information or terminology would cause the answer to be considered wrong
- e) Chatgpt (and similar) is allowed... but it's not needed for improving writing style due to point c, and it will likely cause more harm than good due to point d

Electric vehicles have a dark side too: Blood batteries and child labour

The Democratic Republic of the Congo, a country that is among the poorest on the planet, is paying a heavy price for the global green energy revolution

SCIENCE

THE EV BOOM IS BEING FUELED BY UNDERPAID, UNDERFED COBALT MINERS

Workers at a Tesla supplier say they can't get enough food or water on the job

By Maddie Stone | Feb 15, 2022, 11:30am EST

JUNE 17, 2022

Keep Child and Slave Labor Sourced Electric Vehicles Out of U.S. Military, Ernst Says

NEWS DEFEAT POVERTY

Mining for Metal Used in Smartphone Batteries Is Causing Birth Defects in DRC

Cobalt poses human rights test for Biden on clean energy

By Jael Holzman, David Iaconangelo | 03/15/2022 07:17 AM EDT

AI

Is It Ethical To Use Robots In War? What Are The Risks Associated With It?

Naveen Joshi Former Contributor 

Jul 25, 2022, 07:30am EDT

0 

Yemeni Man Maimed in U.S. Drone Strike Raises Funds Online for His Surgery as Pentagon Refuses Help

STORY JUNE 01, 2022 

Axon ethics board members resign over taser-equipped drone

Axon wanted to place drones in schools and public places to prevent mass shootings. Resigning AI ethics board members saw that move as weaponizing drones and possibly leading to "AI-powered persistent surveillance."



Written by **Greg Nichols**, Contributing Writer on June 8, 2022

NATIONAL SECURITY

Pentagon Reverses Itself And Now Says A Deadly Kabul Drone Strike Was An Error

Updated September 17, 2021 · 5:46 PM ET 

Newly Declassified Video Shows U.S. Killing of 10 Civilians in Drone Strike

The New York Times obtained footage of the botched strike in Kabul, whose victims included seven children, through a Freedom of Information Act lawsuit.

International outcry over genome-edited baby claim

The revelation from a Chinese scientist represents a controversial leap in genome editing.

NEWS FEATURE | 26 February 2019 | Clarification [11 March 2019](#)

The CRISPR-baby scandal: what's next for human gene-editing

As concerns surge after a bombshell revelation, here are four questions about this fast-moving field.



CNN health

Life, But Better Fitness Food Sleep Mindfulness Relationships

Rice professor under investigation for role in 'world's first gene-edited babies'

By Sandee LaMotte, CNN

Updated 11:55 AM EST, Wed November 28, 2018

TECH & SCIENCE

The Story of He Jiankui, Now Out of Jail After Editing DNA of Unborn Babies

BY **ED BROWNE** ON 4/11/22 AT 9:23 AM EDT

Is your face gay? Conservative? Criminal? AI researchers are asking the wrong questions

By Trenton W. Ford | May 20, 2022

LGBT groups denounce 'dangerous' AI that uses your face to guess sexuality

TECHNOLOGY NEWS

DECEMBER 17, 2020 / 12:58 AM / UPDATED 2 YEARS AGO

'I was shocked it was so easy': meet the professor who says facial recognition can tell if you're gay

U.S. bans investment in Chinese surveillance company SenseTime, saying it supports repression of Uyghur minority population

Biden administration calls the sanction part of broad effort to unite democracies against authoritarian states

By Jeanne Whalen

Updated December 10, 2021 at 10:35 p.m. EST | Published December 10, 2021 at 12:20 p.m. EST

Alibaba facial recognition tech specifically picks out Uighur minority - report

Editorial: Life-saving pulse oximeters must be free of racial bias



THE EDITORIAL BOARD
Pittsburgh Post-Gazette

AUG 22, 2022

6:06 PM

Senators seek post-market FDA study of pulse oximeters and skin color

August 16, 2022 By Jim Hammerand

Did a flawed pandemic tool lead to more deaths among Blacks, Hispanics? N.J. docs call for answers.

Updated: Aug. 28, 2022, 4:05 p.m. | Published: Aug. 28, 2022, 7:30 a.m.

'Racially biased' devices caused delayed treatment for Black COVID-19 patients

Pulse oximeters overestimated blood oxygen levels in minorities

AI for policing: Where should we draw the line?

by Leigh Mc Gowran

10 AUG 2022 · SAVE ARTICLE

POLICE AND LAW ENFORCEMENT · GOVERNMENT SURVEILLANCE · ARTIFICIAL INTELLIGENCE

Defund the Police Algorithms

Law enforcement is increasingly turning to software to surveil and anticipate crime. But a grassroots movement is emerging to resist algorithmic policing.

By Michelle Chen 

AUGUST 25, 2022

REPORT

Police surveillance and facial recognition: Why data privacy is imperative for communities of color

Nicol Turner Lee and Caitlin Chin · Tuesday April 12, 2022

USA: Facial recognition technology reinforcing racist stop-and-frisk policing in New York – new research

The battle against global e-waste dumping reaches tipping point



Soaring e-waste affects the health of millions of children, WHO warns

JACKLIN KWAN SCIENCE 26.11.2020 06:00 AM

Your old electronics are poisoning people at this toxic dump in Ghana

How Soaring E-Waste Pollution Is Putting Lives at Risk

BY APRIL MILLER | AMERICAS | MAR 3RD 2022 | 5 MINS

Great Salt Lake "not that far off" from an ecosystem collapse: Toxic dust storms, die-offs loom

As the Great Salt Lake continues to dry up, the ecological future of the region may be bleak

By **ERIC SCHANK**

PUBLISHED JULY 29, 2022 4:33PM (EDT)

Utah lawmakers consider a pipeline from the Pacific Ocean to the Great Salt Lake

NEWS | OCEANOGRAPHY

Utah's Great Salt Lake has lost half its water, thanks to thirsty humans

New study suggests consumption—not climate change—is to blame for falling water levels

Saving the Great Salt Lake could cost billions, House Speaker says

Jeff Bezos blasts into space on own rocket: 'Best day ever!'



1 of 24 | Oliver Daemen, from left, Jeff Bezos, founder of Amazon and space tourism company Blue Origin, Wally Funk and Bezos' brother Mark pose for photos in front of the Blue Origin New Shepard rocket, Derby, after their launch from the spaceport near Van Horn, Texas, Tuesday, July 20, 2021. (AP Photo/Tony Gutierrez)

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1 November 2014



5 MIN READ

NASA Decides to Bring Starliner Spacecraft Back to Earth Without Crew

Newsweek

NASA Astronauts Stuck in Space Hit With Another Delay Before Return Home

The astronauts won't return to Earth until spring, 10 months after launching into orbit.



POPULAR SCIENCE

SCIENCE ▶ SPACE ▶ NASA

NASA warns SpaceX over safety issues after astronaut hospitalization

The agency is concerned after recent mission setbacks and equipment malfunctions.

Moderna files patent infringement lawsuits against Pfizer and BioNTech over mRNA Covid-19 vaccines

By Amanda Sealy and Brenda Goodman, CNN

🕒 Updated 3:46 PM ET, Fri August 26, 2022

South Africa Hails COVID-19 Vaccine Patent Waiver

December 2, 2021 2:30PM EST

Available In English Español

Rich Countries Must Stop Blocking the Covid Vaccine Patent Waiver

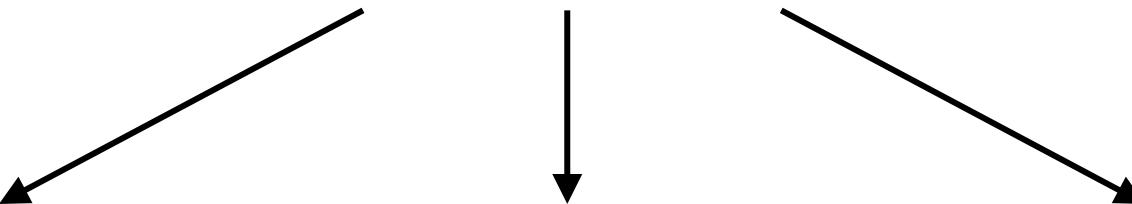
Access to Covid-19 Vaccines and Therapeutics Is Part of the Human Right to Health

W.T.O. countries agree to a limited relaxing of patent protections on coronavirus vaccines.

US-China Fight May Spoil Global Deal for a Covid Vaccine-Patent Waiver

- US seeks explicit exclusion of China from WTO vaccine waiver
- China's offer to opt out is not sufficient, US diplomat says

An ethical question



Factual

- The facts are important!
- Need accurate information—What source???
- In real life, likely won't know all the facts you need

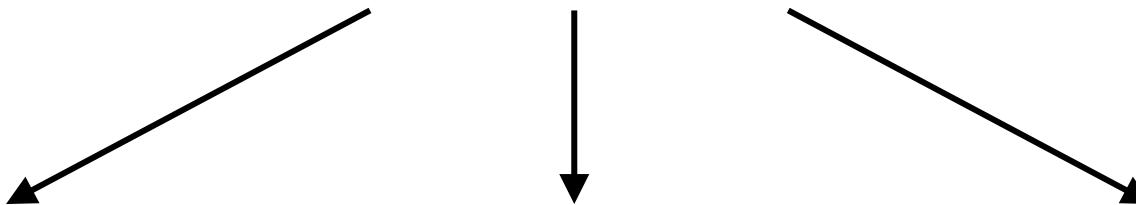
Conceptual

- Key terms could be interpreted differently
- e.g., What is “safe”? What is a “conflict of interest”

Moral

- A conflict between values, desires or obligations
- Can analyze with consequentialist, deontological, virtue ethics

Is it ethical to require vaccines?



Factual

- Are there facts that would influence our answer?

Conceptual

- Do any key ideas have ambiguous definitions?

Moral

- What are the distinctly moral issues?

- health risks of vaccination...
need REAL and ACCURATE scientific evidence

Myocarditis following COVID-19 vaccine: incidence, presentation, diagnosis, pathophysiology, therapy, and outcomes put into perspective. A clinical consensus document supported by the Heart Failure Association of the European Society of Cardiology (ESC) and the ESC Working Group on Myocardial and Pericardial Diseases

Bettina Heidecker^{1*}, Noa Dagan², Ran Balicer², Urs Eriksson³, Giuseppe Rosano⁴, Andrew Coats^{5,6}, Carsten Tschöpe⁷, Sebastian Kelle⁷, Gregory A. Poland⁸, Andrea Frustaci^{9,10}, Karin Klingel¹¹, Pilar Martin¹², Joshua M. Hare¹³, Leslie T. Cooper¹⁴, Antonis Pantazis¹⁵, Massimo Imazio¹⁶, Sanjay Prasad¹⁵, and Thomas F. Lüscher^{15,17*}

¹Cardiology, Campus Benjamin Franklin, Charité - Universitätsmedizin Berlin, Corporate Member of Freie Universität Berlin und Humboldt, Universität zu Berlin, Berlin, Germany; ²Clalit Health Services, Clalit Research Institute, Ramat Gan, Israel; ³Department of Internal Medicine, Division of Cardiology, GZO - Zurich Regional Health Center, Wetzikon & University of Zurich, Zurich, Switzerland; ⁴St. Georges Medical University of London, London, UK; ⁵Monash University, Melbourne, Victoria, Australia; ⁶University of Warwick, Warwick, UK; ⁷Cardiology, German Heart Center, Charité – University Medicine, Berlin, Germany; ⁸Mayo Clinic, Rochester, MN, USA; ⁹Department of Cardiovascular, Respiratory, Nephrologic, Anesthesiologic and Geriatric Sciences, La Sapienza University, Rome, Italy; ¹⁰IRCCS L. Spallanzani, Rome, Italy; ¹¹Cardiopathology, Institute for Pathology and Neuropathology, University Hospital Tübingen, Tübingen, Germany; ¹²Centro Nacional de Investigaciones Cardiovasculares, Madrid, Spain; ¹³Interdisciplinary Stem Cell Institute, University of Miami, Miami, FL, USA; ¹⁴Mayo Clinic Vaccine Research Group, Mayo Clinic, Rochester, MN, USA, and Cardiology, Mayo Clinic Jacksonville, Jacksonville, FL, USA; ¹⁵Royal Brompton and Harefield Hospitals and Imperial College London, London, UK; ¹⁶Cardiothoracic Department, Cardiology, Udine University Health Integrated Agency, Udine, Italy; and ¹⁷Center for Molecular Cardiology, University of Zurich, Zurich, Switzerland

Received 4 June 2022; revised 12 August 2022; accepted 25 August 2022; online publish-ahead-of-print 6 October 2022

Table 4 Clinical characteristics of vaccination-related myocarditis

Symptoms	Signs
Chest pain or pressure, may be respiratory-dependent	Elevated troponins (peak between 48–72 h after symptom onset)
Shortness of breath	C-reactive protein elevation
Palpitations	Minor pericardial effusion on transthoracic echocardiography
Malaise	Cardiac inflammation on cardiac magnetic resonance imaging
General weakness and fatigue	Electrocardiographic changes (most commonly subtle and non-specific): Mild diffuse ST-segment changes PQ segment depressions Non-specific ST-segment changes
Subfebrile or febrile temperatures	Sinus tachycardia Supraventricular or ventricular arrhythmias (very rare) Clinical signs of heart failure and severe arrhythmias are very rare

Table 2 VAERS Reporting Rates of Myocarditis (per million doses administered) after mRNA vaccine, days 0–7

Vaccine	Age (years)	Males			Females		
		Dose 1	Dose 2	Booster	Dose 1	Dose 2	Booster
Pfizer	5–11	0.2	2.6	0	0.2	0.7	0
Pfizer	12–15	5.3	46.4	15.3	0.7	4.1	0
Pfizer	16–17	7.2	75.9	24.1	0	7.5	0
Either	18–24	4.2	38.9	9.9	0.6	4.0	0.6
Either	25–29	1.8	15.2	4.8	0.4	3.5	2.0
Either	30–39	1.9	7.5	1.8	0.6	0.9	0.6
Either	40–49	0.5	3.3	0.4	0.4	1.6	0.6
Either	50–64	0.5	0.7	0.4	0.6	0.5	0.1
Either	≥65	0.5	0.3	0.6	0.1	0.5	0.1

Either means either Pfizer or Moderna mRNA vaccine administered. Data as of 26 May 2022.

Bold numbers indicate rates that exceed calculated baseline rate in the population of 0.2–2.2 per million population.

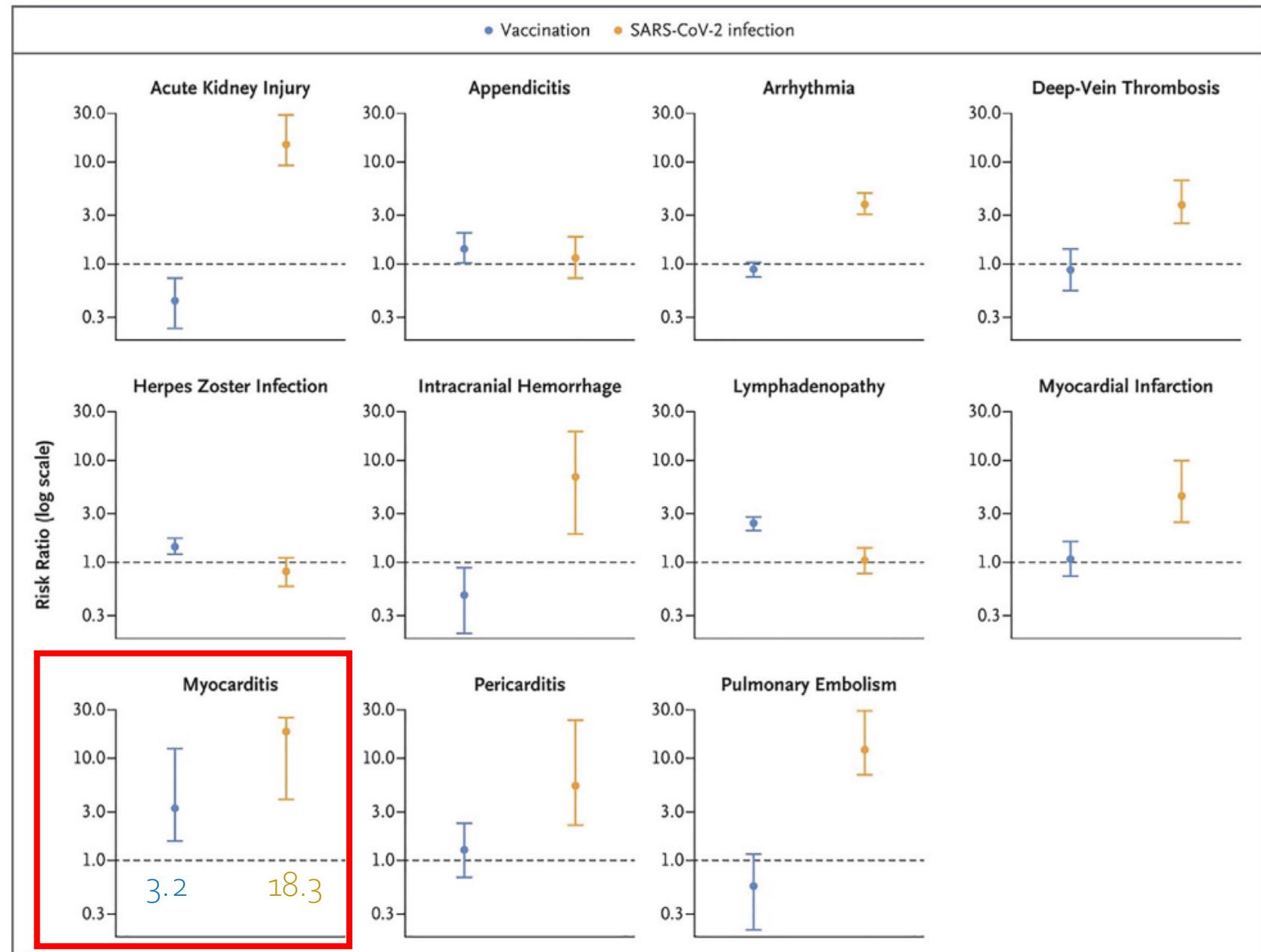
Data presented at the Advisory Committee of the Immunization Practices Committee, June 2022.

Bold numbers indicate rates that exceed baseline rate in the population

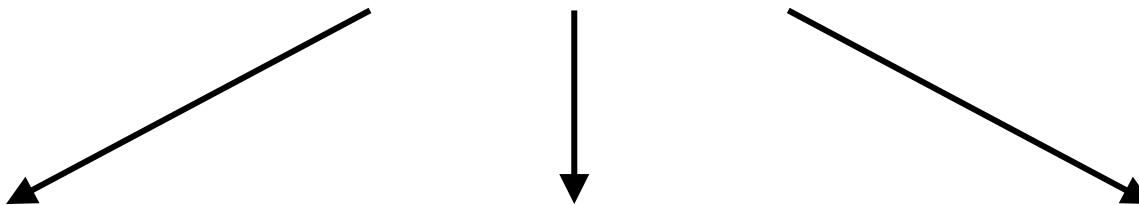
But other facts may also be relevant...

... such as risk for same complication when infected with covid

Note log scale!



Is it ethical to require vaccines?



Factual

- Are there facts that would influence our answer?

• health risks of vaccination...
need **REAL** and **ACCURATE**
scientific evidence

Conceptual

- Do any key ideas have ambiguous definitions?

• what is an "acceptable risk"
i.e., what is "safe"?

Moral

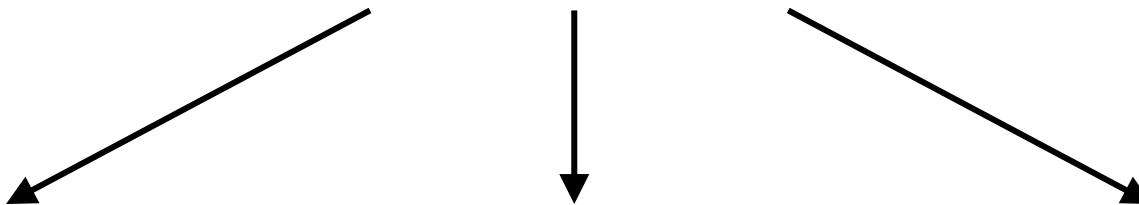
- What are the distinctly moral issues?

• personal freedom, liberty
• your vaccine affects health of others in the community

Moral issues

- One might argue that vaccine mandates are a violation of our personal freedom or liberty: it should be my decision whether or not I get vaccinated, not the state's!
- Alternatively:
 - imagine that vaccination against disease X makes X less contagious. If I don't get vaccinated, I might spread X to other people—even if my own infection is asymptomatic.
 - ...Or I might get sick with X and end up in the hospital, thus taking up a hospital bed that someone who just got in a car accident might have had available to them.
 - ...Or if I don't get vaccinated, this could make it much riskier for immunocompromised individuals in public, thus negatively impacting their quality of life and mental health.

Is it ethical to require vaccines?



Factual

- Are there facts that would influence our answer?

Conceptual

- Do any key ideas have ambiguous definitions?

Moral

- What are the distinctly moral issues?

• health risks of vaccination...
need REAL and ACCURATE
scientific evidence

• what is an "acceptable risk"
i.e., what is "safe"?

• personal freedom, liberty
• your vaccine affects health of
others in the community

This is where thinking about the facts from the ethical perspectives of consequentialism, deontology, and virtue ethics can be helpful—at least as points of departure:

- Maybe vaccine mandates are for the “greater good” (utilitarianism)—or maybe not?
- Maybe deontological moral rules about never harming others that make it wrong not to get vaccinated? Or would deontological rules make it wrong to require vaccinations?
- Etc.

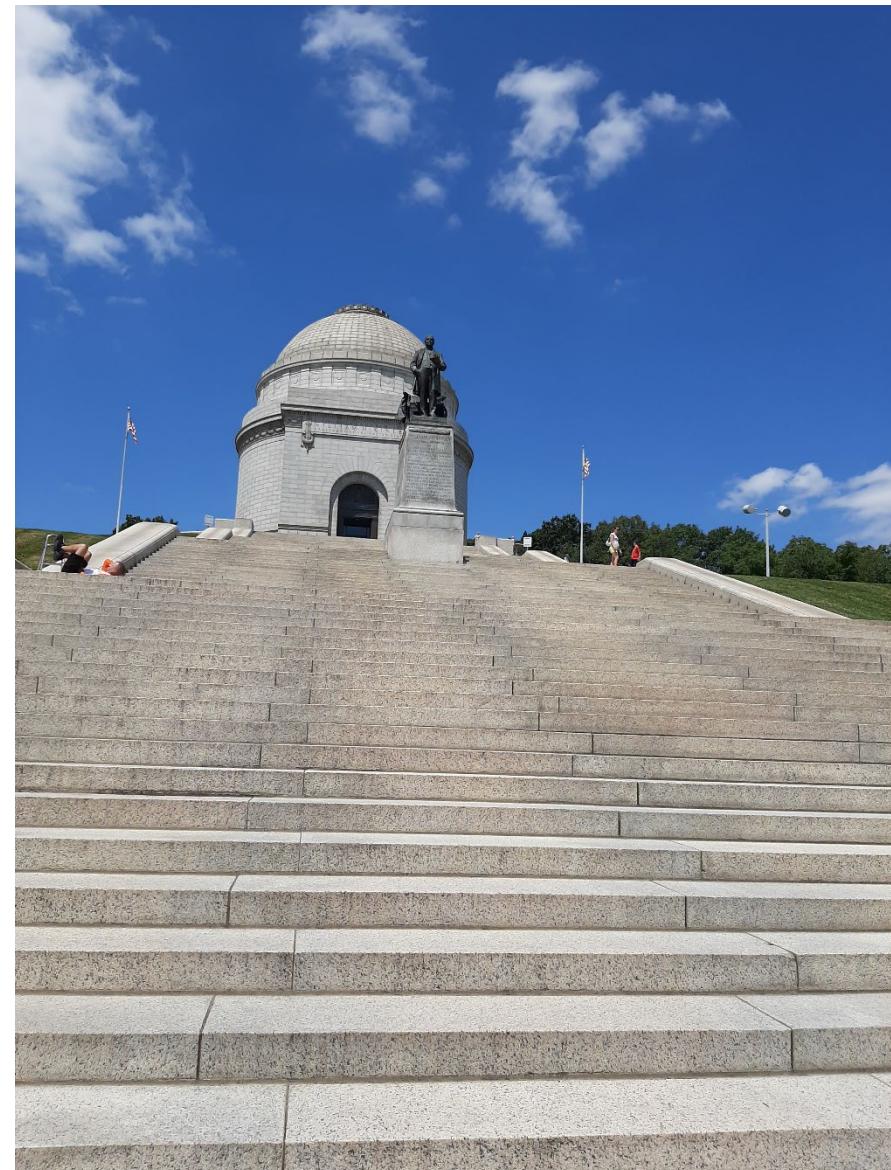
Tracking down an assassin in
my neighborhood



President William McKinley
from Canton, OH

Elected President 1896
Re-elected 1900
Assassinated 1901

McKinley Memorial
Canton, OH
~ 1 hr drive from CWRU



X



Marcus Hanna, who was kicked out of CWRU for a prank!

"YES, WILLIE, THIS IS A RUBBER TOY TO AMUSE YOU AND TEDDY. IT REPRESENTS THE
WORKING CLASSES. SEE HOW PAPA PULLS ITS LEG."



April 6, 1901, in Buffalo

Leon Czolgosz

From Wikipedia, the free encyclopedia

Leon Frank Czolgosz (/tʃɔlgɒz/; Polish pronunciation: [tʂɔlgɔʂ]; May 5, 1873 – October 29, 1901) was an American steelworker and anarchist who assassinated American President William McKinley on September 6, 1901 in Buffalo, New York. Czolgosz was executed seven weeks later on October 29, 1901. While some American anarchists described his action as inevitable, motivated by the country's brutal social conditions, others condemned his actions, arguing that he hindered the movement's goals by damaging its public perception.

Contents [hide]

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- 2 Interest in anarchism
- 3 Assassination of President William McKinley
- 4 Trial and execution
- 5 Legacy
- 6 Portrayals in media
- 7 See also
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 - 9.2 Cited sources
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- 11 External links

Leon Czolgosz



Leon Czolgosz in 1900

Born	Leon Frank Czolgosz May 5, 1873 ^[1] Alpena, Michigan, U.S.
Died	October 29, 1901 (aged 28) Auburn, New York, U.S.
Cause of death	Electrocution (executed by electric chair)
Occupation	Steel worker
Criminal status	Executed by electric chair
Parent(s)	Paul Czolgosz ^[2] Mary Nowak
Motive	To advance anarchism
Conviction(s)	Assassination of William McKinley
Criminal charge	First-degree murder
Penalty	Death by electrocution

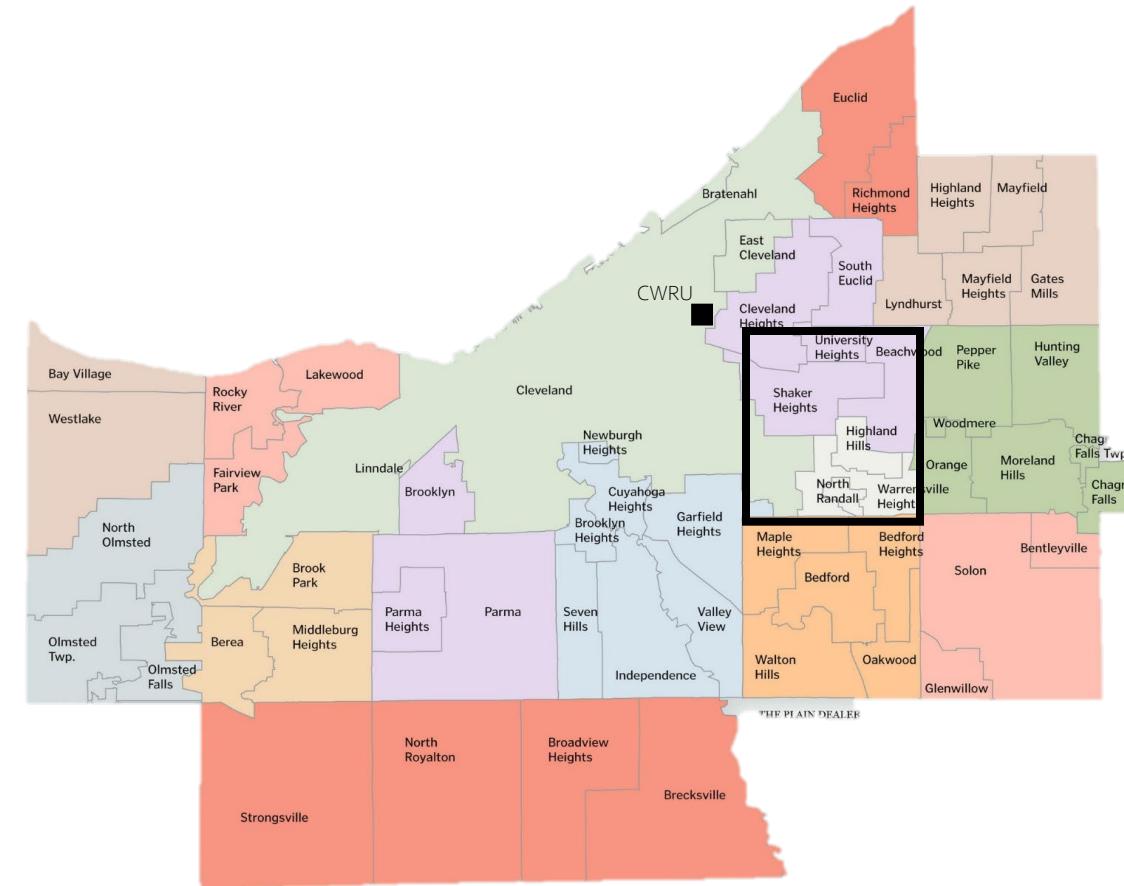
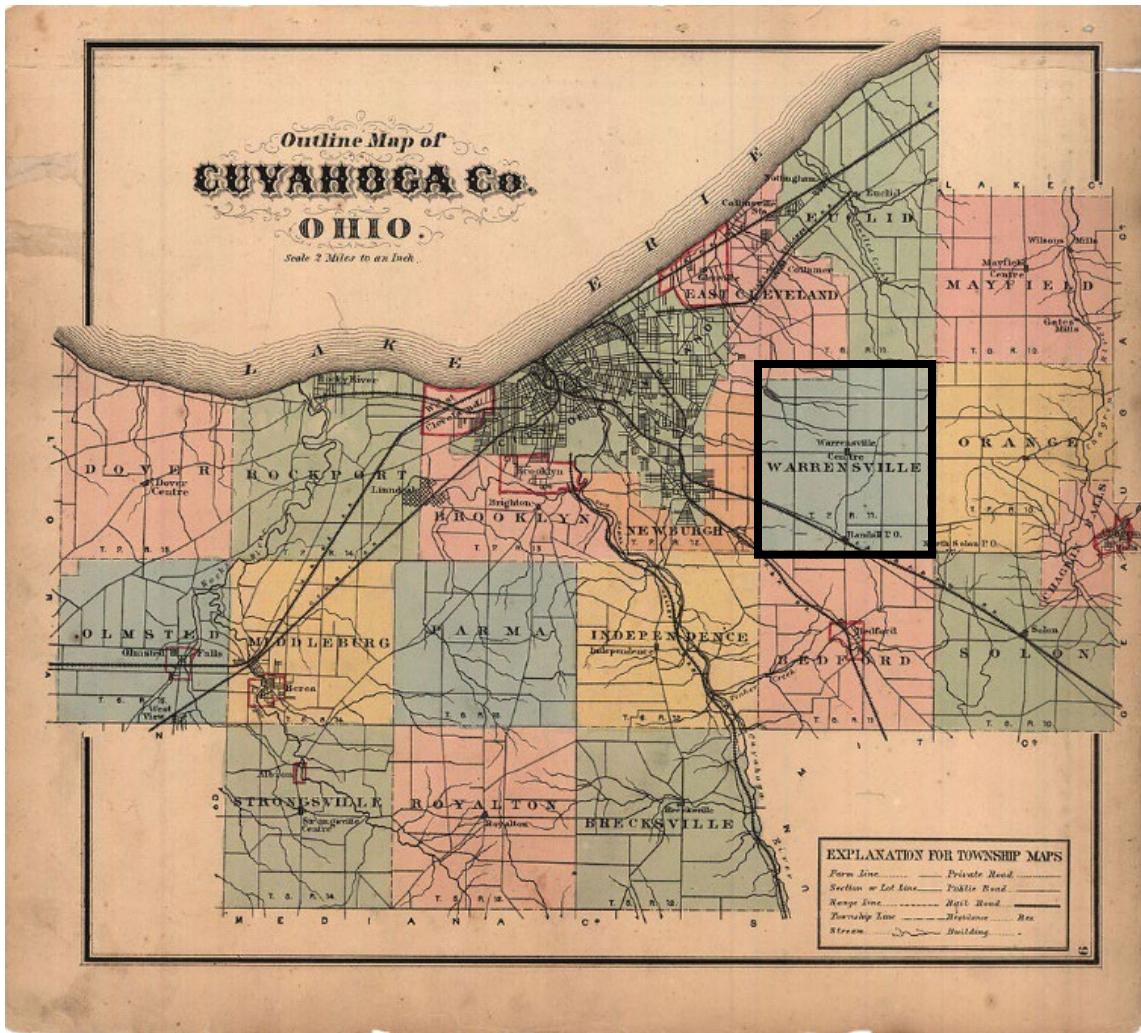
Early life [edit]

Czolgosz was born in Alpena, Michigan,^{[3][4][5]} on May 5, 1873.^[a] He was one of eight children^[7] born to the Polish-American family of Paul Czolgosz and his wife Mary Nowak. The Czolgosz family moved to Detroit, Michigan, when Leon was 5 years old.^[b] When he was 10, while living in Posen, Michigan, Czolgosz's mother died six weeks after giving birth to his sister, Victoria.^[9] In his mid-teens, he worked in a glass factory in Natrona, Pennsylvania.^{[10][11]} By age 17, he found employment at the Cleveland Rolling Mill Company.^[12]

After the economic crash of 1893, when the factory closed for some time and looked to reduce wages, the workers went on strike. With great economic and social turmoil around him, Czolgosz found little comfort in the Catholic Church and other immigrant institutions, and sought others who shared his concerns regarding injustice. He joined a moderate working man's socialist club, the Knights of the Golden Eagle, and eventually a more radical socialist group known as the Sila Club, where he became interested in anarchism.^{[13][14]}

Interest in anarchism [edit]

In 1898, after witnessing a series of similar strikes, many ending in violence, and perhaps ill from a respiratory disease, Czolgosz went to live with his father, who had bought a 50-acre (20 ha) farm the year before in Warrensville, Ohio.^{[15][16]} He did little to assist in the running of the farm and was constantly at odds with his stepmother and with his family's Roman Catholic beliefs. It was later recounted that throughout his life he had never shown any interest in friendship or romantic relationships and was bullied during his childhood by peers.^[17]



[www.thealpenanews.com](#) › news › local-news › 2016/09 ▾

[NE Michigan plays role in McKinley assassination | News ...](#)

Sep 26, 2016 - Price described Czolgosz as well-read, quiet and introverted. The next major turning point came after Czolgosz moved to Warrensville, Ohio. It ...

[www.seattletimes.com](#) › entertainment › books › the-presi...

['The President and the Assassin': when ruthless capitalism ...](#)

Jun 9, 2011 - ... the family farm at Warrensville, Ohio, not terribly distant from McKinley's home in Canton. Czolgosz found reasons and answers in anarchism, ...

[murderpedia.org](#) › male.C › czolgosz-leon-frank ▾

[Leon Frank Czolgosz | Murderpedia, the encyclopedia of ...](#)

Czolgosz then returned to the family farm in Warrensville. At the age of sixteen, he was sent to work in a glass factory in Natrona, Pennsylvania for two years ...

Date of murder: September 6, 1901

[allthatsinteresting.com](#) › men-that-assassinated-presidents ▾

[Who Were The Four Men That Have Assassinated Presidents?](#)

Sep 26, 2017 - Leon Czolgosz, the man who assassinated William McKinley, was ... Czolgosz moved in with his father and stepmother in Warrensville, Ohio.

[murdochmysteries.fandom.com](#) › wiki › Leon_Czolgosz ▾

[Leon Czolgosz | Murdoch Mysteries Wiki | Fandom](#)

... and possibly ill from a respiratory disease, Czolgosz went to live with his father who had bought a fifty-five acre farm the year before in Warrensville, Ohio.

[Assassins: Leon Czolgosz - Histeria](#)

Mar 14, 2013 - The Czolgosz's moved to Detroit when Leon was five and then eventually ended up in Warrensville, Ohio. Seeing as this was a nation that ...

[peoplepill.com](#) › people › leon-czolgosz ▾

[Leon Czolgosz: Steel worker and assassin of U.S. President ...](#)

Leon Czolgosz: Steel worker and assassin of U.S. President William ... with his father who had bought a fifty-five acre farm the year before in Warrensville, Ohio.

Death: 29 October 1901, Auburn (aged 28 years)

[everything.explained.today](#) › Leon_Czolgosz ▾

[Leon Czolgosz Explained - Everything Explained Today](#)

... and perhaps ill from a respiratory disease, Czolgosz went to live with his father who had bought a 50-acre (20 ha) farm the year before in Warrensville, Ohio.

[www.thefamouspeople.com](#) › profiles › leon-czolgosz... ▾

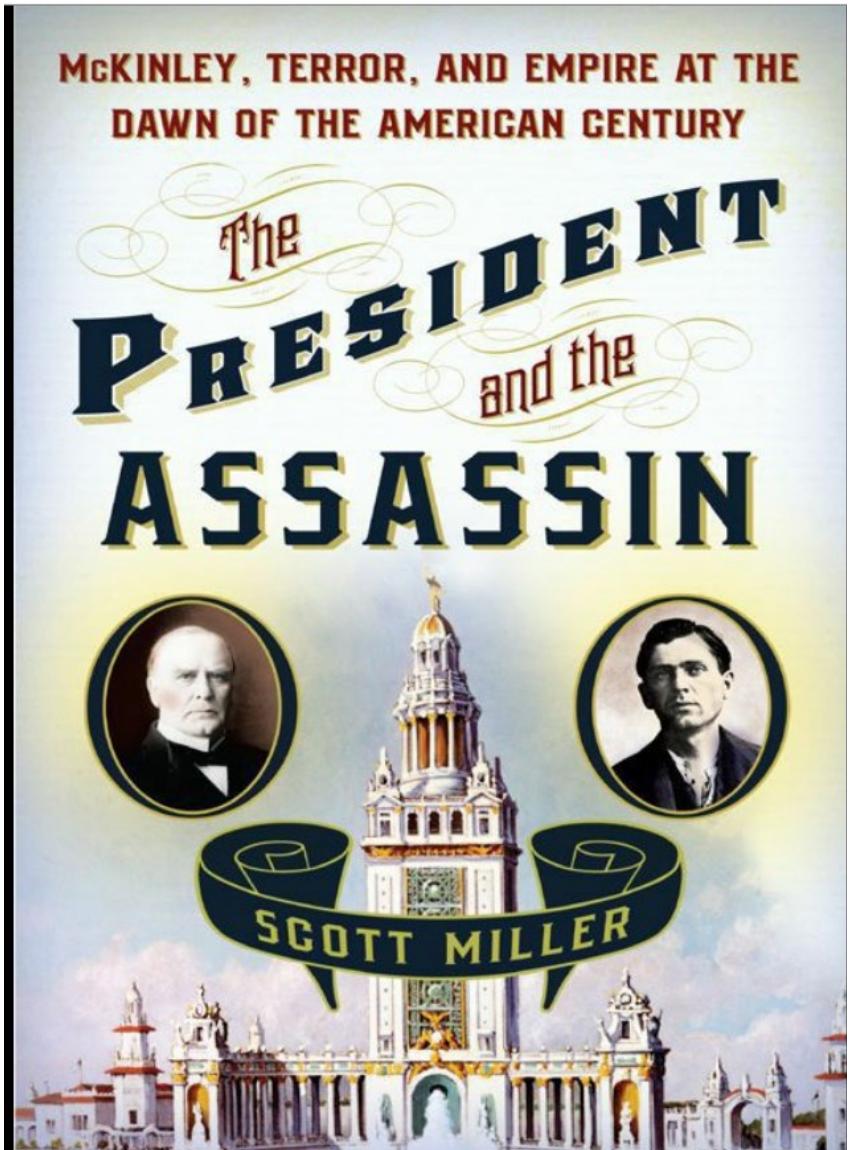
[Leon Czolgosz Biography - Facts, Childhood, Life](#)

Leon Czolgosz was a Polish-American anarchist who assassinated American ... By then, his father had bought a 55 acre farm in Warrensville, Ohio and Leon ...

[cn.stavraduga.ru](#) › ... ▾

[Assassination of William McKinley Anarchism, Insanity, and the Birth ...](#)

Czolgosz, an anarchist, shot the president during one of his public ... the former born in Niles, the latter in Detroit before living on the family farm in Warrensville.



HUNTING RABBITS

Warrensville, Ohio, on the outskirts of Cleveland, was pastoral middle America at its best, with rolling green hills that were home to rabbits and other game, leafy forests that turned wonderful hues of orange and yellow in the fall, and sparkling streams from which anglers might easily catch dinner. It was here in 1897, on a fifty-five-acre spread with a large house, a barn with cows, and a small pond, that Paul Czolgosz finally achieved his dream to own land, purchased when the extended family pooled its money and moved in together. Here, too, his son Leon would spend much of the rest of his brief life.

ABOUT THE AUTHOR

As a correspondent for *The Wall Street Journal* and Reuters news agency, SCOTT MILLER spent nearly twenty years based in Asia and Europe, reporting from more than twenty-five countries. Miller holds a master's degree in international relations from the University of Cambridge. He now lives in Seattle with his wife and two daughters.

Collaborators

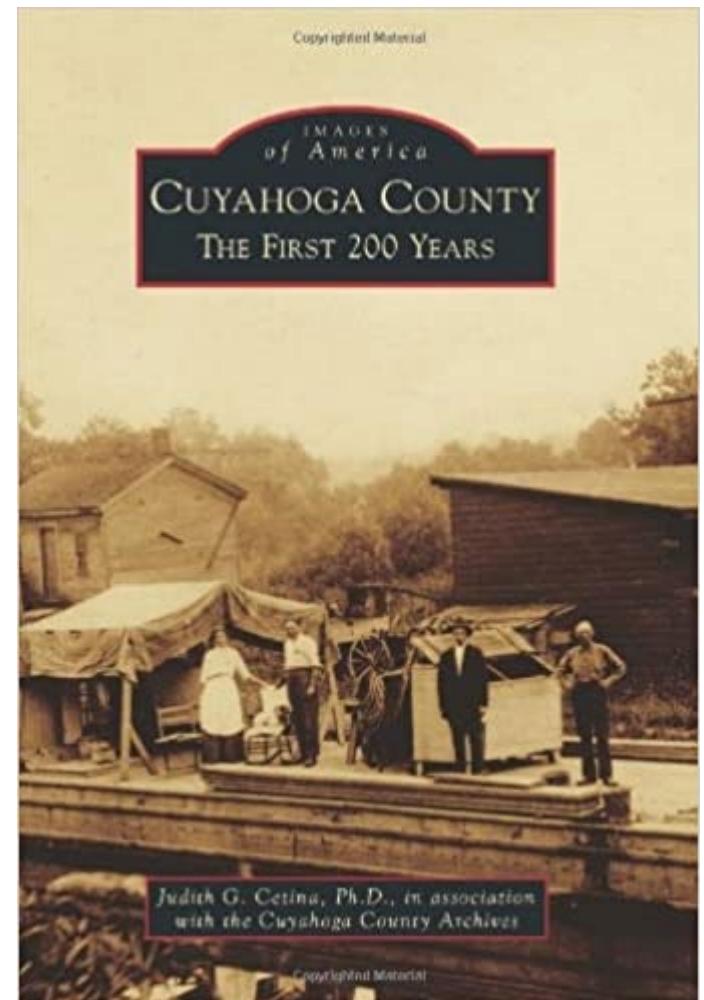
The screenshot shows the Case Western Reserve University website. At the top is the university's logo with the text "CASE WESTERN RESERVE UNIVERSITY EST. 1826". Below it is a dark blue header with the text "College of Arts and Sciences". Underneath is a grey header with "Department of History". A navigation bar below includes "About Us", "Academic Programs", "News and Events", "Courses", and "History Association".

John Grabowski

Krieger-Mueller Joint Professor in History



Professor John J. Grabowski's interests and research span the fields of public and academic history. He specializes in the areas of immigration and ethnicity; local (Cleveland) urban history; and public history, particularly the fields of archives and museums. He holds a joint appointment with the Department of History at CWRU and the Western Reserve Historical Society, where he serves as Historian and Senior Vice President for Research and Publications. In addition to teaching at the department he also oversees the World Wide Web edition of The Encyclopedia of Cleveland History/Dictionary of Cleveland History.



Judith Cetina
Director of Cuyahoga County Archives

1903 map ... no property for Czolgosz



"The Home of Czolgosz", *Cleveland Leader*, Sept. 16, 1901.

The farm consists of fifty-five acres and is located about fifteen minutes' walk south of the Cleveland & Chagrin Falls electric railway from Orange switch...

The house is a two-story frame dwelling, and it was here that Leon Czolgosz lived while he was studying the doctrines that made him the assassin of President McKinley.

In 1897 Paul Czolgosz, the father of the assassin, bought the Orange township farm and moved thereon. The venture did not prove a success in every sense, although it did financially, but this was on account of Leon and the other brothers continually quarreling with the stepmother and their father.

They finally succeeded in getting a purchaser, and three weeks ago sold the farm to John Smid, of Cleveland, who now occupies the place.

Original property records (from Cuyahoga County Archives)

purchase in 1897

167687. Jessie A. and H. J. Springborn To Paul Ozolacz.
Know all men by these presents that we, Jessie A. Springborn in her own right
and H. J. Springborn her husband the grantors for the consideration of five
thousand dollars (\$4000.00) received to our full satisfaction of Paul Ozolacz:
+ do hereby grant + convey unto the said grantee his hei-

sale in 1901

250738. Waldeck Ozolacz and Dr. - Bo - Vachawnd
Veronica Smid.

Know all men by these presents, that I Waldeck Ozolacz Trustee
and J. Waldeck Ozolacz (single) the grantor, for the consideration
of three thousand five hundred dollars (\$3500.00) received to my full

1903 Orange Township map ... here is the property!





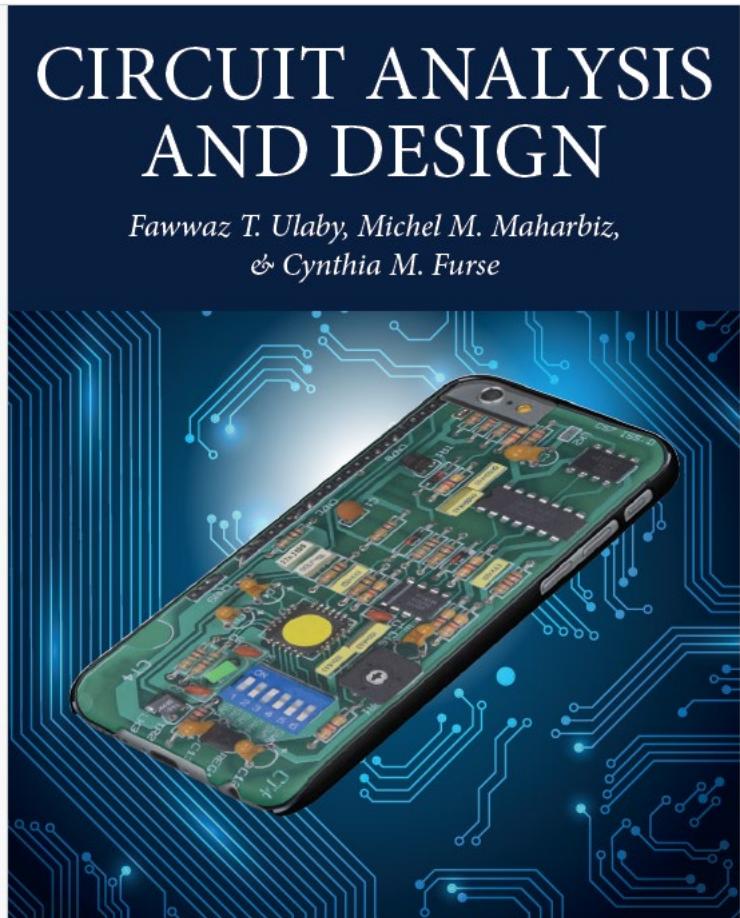
The Czolgosz farm was located at what is now Pinecrest, an upscale shopping center

Why did I include this story?

Another story...

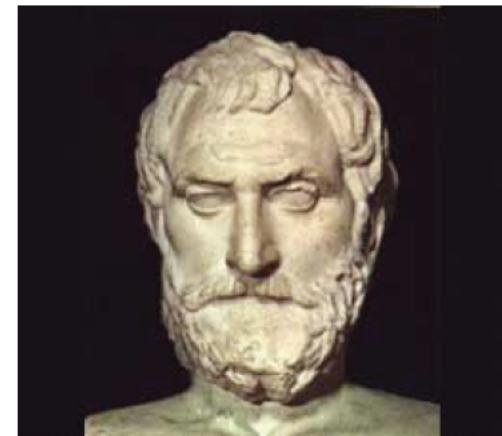
What is the history of the science of electricity?

ENGR 210 textbook...



pg 4:

ca. 600 BC **Static electricity**: Greek philosopher **Thales** described how amber, after being rubbed with cat fur, can pick up feathers.



1600 **Electric**: The term was coined by **William Gilbert** (English) after the Greek word for amber (*elektron*). He observed that a compass needle points north to south, indicating the Earth's magnetic field.

8 References
9 External links

History

Main articles: [History of electromagnetic theory](#) and [History of electrical engineering](#)

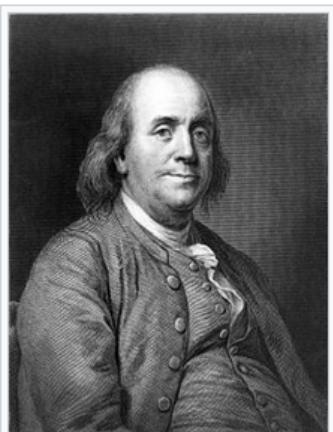
See also: [Etymology of electricity](#)

Long before any knowledge of electricity existed, people were aware of shocks from electric fish. Ancient Egyptian texts dating from 2750 BCE referred to these fish as the "Thunderer of the Nile", and described them as the "protectors" of all other fish. Electric fish were again reported millennia later by ancient Greek, Roman and Arabic naturalists and physicians.^[2] Several ancient writers, such as Pliny the Elder and Scribonius Largus, attested to the numbing effect of electric shocks delivered by electric catfish and electric rays, and knew that such shocks could travel along conducting objects.^[3] Patients suffering from ailments such as gout or headache were directed to touch electric fish in the hope that the powerful jolt might cure them.^[4]

Ancient cultures around the Mediterranean knew that certain objects, such as rods of amber, could be rubbed with cat's fur to attract light objects like feathers. Thales of Miletus made a series of observations on static electricity around 600 BCE, from which he believed that friction rendered amber magnetic, in contrast to minerals such as magnetite, which needed no rubbing.^{[5][6][7][8]} Thales was incorrect in believing the attraction was due to a magnetic effect, but later science would prove a link between magnetism and electricity. According to a controversial theory, the Parthians may have had knowledge of electroplating, based on the 1936 discovery of the Baghdad Battery, which resembles a galvanic cell, though it is uncertain whether the artifact was electrical in nature.^[9]

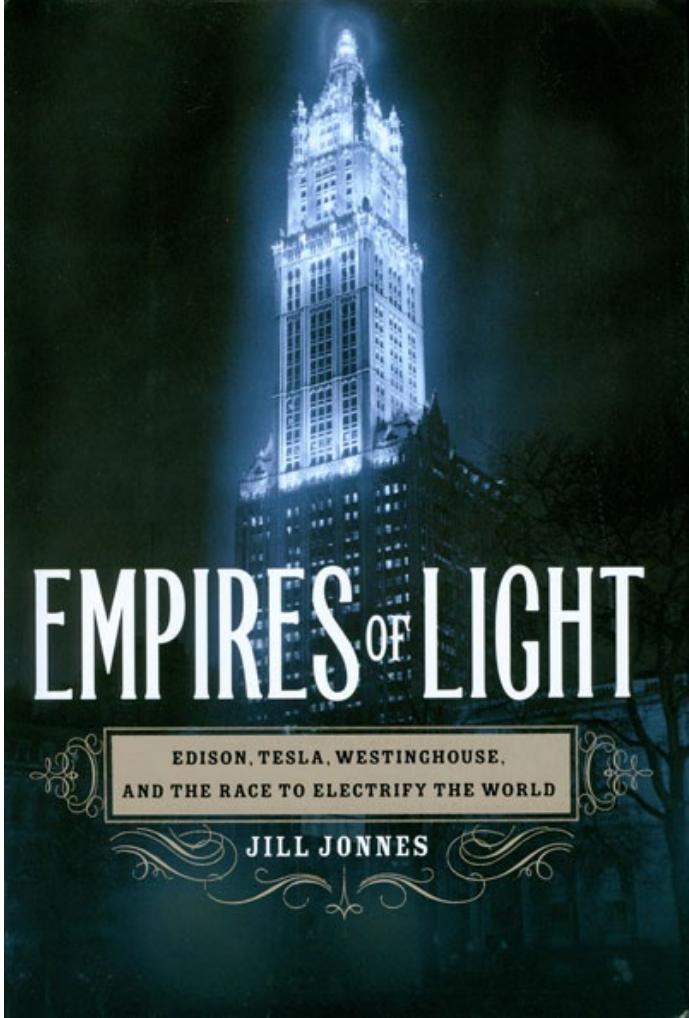


Thales, the earliest known researcher into electricity



Electricity would remain little more than an intellectual curiosity for millennia until 1600, when the English scientist William Gilbert wrote *De Magnete*, in which he made a careful study of electricity and magnetism, distinguishing the lodestone effect from static electricity produced by rubbing amber.^[5] He coined the New Latin word *electricus* ("of amber" or "like amber", from ἡλεκτρον, *elektron*, the Greek word for "amber") to refer to the property of attracting small objects after being rubbed.^[10] This association gave rise to the English words "electric" and "electricity", which made their first appearance in print in Thomas Browne's *Pseudodoxia Epidemica* of 1646.^[11]

Further work was conducted in the 17th and early 18th centuries by Otto von Guericke, Robert Boyle, Stephen Gray and C. F. du Fay.^[12] Later in the 18th century, Benjamin Franklin conducted extensive research in electricity, selling his possessions to fund his work. In June 1752 he is reputed to have attached a metal key to the bottom of a dampened kite string and flown the kite in a storm-threatened sky.^[13] A succession of sparks jumping from the key to the back of his hand showed that lightning was indeed electrical in nature.^[14] He also explained the apparently paradoxical behavior^[15] of the Leyden jar as a device for storing large amounts of electrical charge in terms of electricity consisting of both positive and negative charges.^[12]



Almost two millennia would pass before **Thales's original observations** about amber were enlarged upon. In 1600, the much esteemed London physician and philosopher William Gilbert was appointed chief doctor to the strong-willed and aged Virgin Queen, Elizabeth I. Gilbert not only **replicated Thales's amber experiments**, he went far beyond them.

Biography

... Ph.D. in American history at Johns Hopkins University.

THE ELECTRON

ITS ISOLATION AND MEASUREMENT AND THE
DETERMINATION OF SOME OF
ITS PROPERTIES

By

ROBERT ANDREWS MILLIKAN
Professor of Physics, the University of Chicago



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INTRODUCTION

Perhaps it is merely a coincidence that the man who first noticed that the rubbing of amber would induce in it a new and remarkable state now known as the state of *electrification* was also the man who first gave expression to the conviction that there must be some great unifying principle which links together all phenomena and is capable of making them rationally intelligible; that behind all the apparent variety and change of things there is some primordial element, out of which all things are made and the search for which must be the ultimate aim of all natural science. Yet if this be merely a coincidence, at any rate to Thales of Miletus must belong a double honor. For he first correctly conceived and correctly stated, as far back as 600 B.C., the spirit which has actually guided the development of physics in all ages, and he also first described, though in a crude and imperfect way, the very phenomenon the study of which has already linked together several of the erstwhile isolated departments of physics, such as radiant heat, light, magnetism, and electricity, and has very recently brought us nearer to the primordial element than we have ever been before.

nature physics

SEPTEMBER 2015 VOL 11 NO 9
www.nature.com/naturephysics

A necklace of fractional vortices

CONDENSED MATTER

Massless Weyl fermions discovered

GRANULAR CHARGING

Zero-gravity clusters

HIGH-ENERGY PHYSICS

Revisiting CKM



GRANULAR MATTER

Charges dropped

Granular charging can create some spectacular interactions, but gravity obscures them. A neat desktop experiment circumvents this problem, shining a light on grain planet formation.

Frank Spahn and Martin Seiß

Nearly 2,600 years ago, Thales of Miletus noticed that amber rubbed against wool attracted straw — an effect that must have seemed quite mystical at the time.

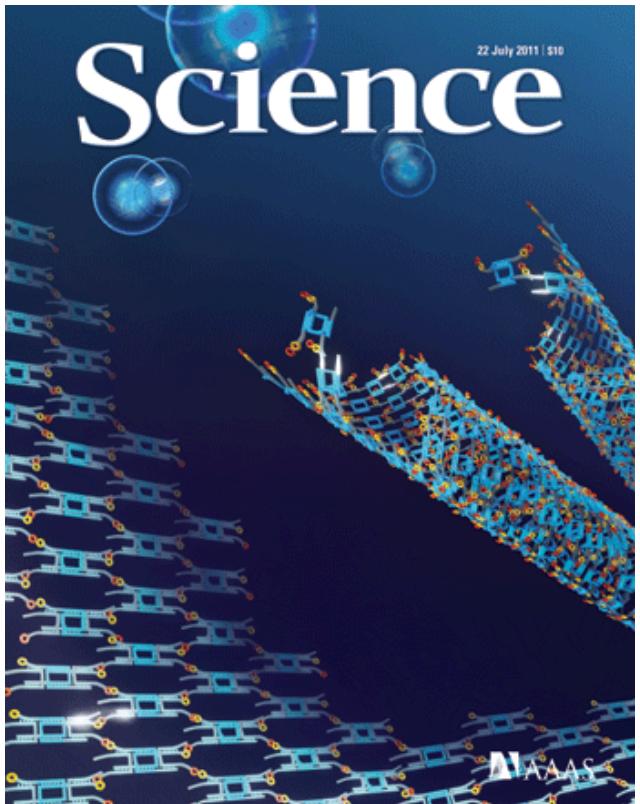
It is perhaps no coincidence then that the term electricity originates from the Greek word for amber. The electrostatic forces between charged dielectric materials have continued to capture our attention since the time of the ancient Greeks. And now, writing in *Nature Physics*, Victor Lee and colleagues¹ have found a way of better understanding these forces without the confounding effects of gravity.

Lee *et al.*¹ studied the behaviour of a free-falling stream of submillimetre-sized zirconium dioxide–silicate grains using a three-metre-tall ‘desktop’ drop-tower



ALMA (ESO/NAOJ/NRAO)

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The Mosaic of Surface Charge in Contact Electrification

H. T. Baytekin, A. Z. Patashinski, M. Branicki, B. Baytekin, S. Soh, B. A. Grzybowski¹

When dielectric materials are brought into contact and then separated, they develop static electricity. For centuries, it has been assumed that such contact charging derives from the homogeneous material properties (along the material's surface) and that within a given material, one charges uniformly positively and the other negatively. We demonstrate that this picture of contact charging is incorrect. Whereas each contact-electrified piece develops a net charge of either positive or negative polarity, each surface supports a random "mosaic" of oppositely charged regions of nanoscopic dimensions. These mosaics of surface charge have the same topological characteristics for different types of electrified dielectrics and accommodate significantly more charge per unit area than previously thought.

Contact electrification (1–3), which is the transfer of charge between two surfaces that are brought into contact and then separated, is one of the oldest areas of scientific study, dating back to Thales of Miletus and his experiments with amber charging against wool (4). Although contact electrification has been successfully applied in several useful technologies [e.g., photocopying (5), laser printing (6), and electro-

static separations (7)] and chemically (8, 9), remarkably little is known about the mechanism underlying this phenomenon, especially for non-elemental insulators (1, 10–15). In this text, it is commonly assumed that contact charging derives from spatially homogeneous (on length-scales larger than molecular) properties of contacting materials (1–3). (i) and (ii) within a given pair of materials, o

Collaborator

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Paul Iversen

Associate Professor and Chair Department of Classics, Director of Undergraduate Studies



Paul Iversen regularly teaches upper level Greek, Greek Civilization, Greek History, Archaeological and Epigraphical Field School, a SAGES departmental seminar on Alexander the Great, and Latin Comedy. His research interests and publications are in the areas of Greek and Latin Epigraphy, Hellenistic Culture and Society, and Greco-Roman New Comedy, especially Menander. He is currently working on two book projects. The first, in collaboration with John D. Morgan, concerns the recently deciphered calendar and games dial on the Antikythera Mechanism, while the second is a new *Inscriptiones Graecae* volume covering the Greek and Latin inscriptions of Corinth.

Thales of Miletus (~624 BC – ~545 BC)



All that is known about Thales comes from the later writings of others:

- Herodotus (*ca. 484 – ca. 425 B.C.*)
mentions amber, but not in connection to Thales or electrostatics
- Plato (*424 – 348 B.C.*)
mentions electrostatics, but not in connection to Thales
- Aristotle (*384 – 322 B.C.*)
mentions Thales in connection to magnetism
- Pliny the Elder (*A.D. 23/4 – 79*)
mentions magnetism, but not in connection to Thales
- Diogenes Laërtius (*ca. A.D. 200 – 250*)
mentions Thales in connection to magnetism and electrostatics

The only connection of Thales to electrostatics in any ancient source is one sentence written 800 yrs after he died

Άριστοτέλης δὲ καὶ Ἰππίας φασὶν αύτὸν [= Θαλῆν] καὶ τοῖς
ἀψύχοις μεταδιδόναι ψυχῆς, τεκμαιρόμενον ἐκ τῆς λίθου τῆς
μαγνήτιδος καὶ τοῦ ἡλέκτρου.

Aristotle and Hippias say that he [Thales] attributed a share
of *soul*/to inanimate things, taking his proof from the
magnet and from amber.

Diogenes Laërtius, *Lives of Eminent Philosophers* 1.24.
(ca. A.D. 200 – 250)



Contents lists available at SciVerse ScienceDirect

Journal of Electrostatics

journal homepage: www.elsevier.com/locate/elstat



Short communication

A life of its own: The tenuous connection between Thales of Miletus and the study of electrostatic charging

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ABSTRACT

Thales of Miletus, a Presocratic Greek Philosopher, is often credited with discovering electrostatic charging and carrying out the first experiments or systematic observations of this phenomenon. We examine the original sources from antiquity to uncover Thales' true contributions. Thales is likely to have commented on electrostatics in connection to his philosophical idea that even lifeless things have a share or piece of soul in them, but there is no basis to believe that he discovered, carried out experiments on, or systematically observed electrostatic charging.

Electrostatics and Electrochemistry: Mechanism and Scope of Charge-Transfer Reactions on the Surface of Tribocharged Insulators

Jinyang Zhang, Michelle L. Coote,* and Simone Ciampi*



Cite This: *J. Am. Chem. Soc.* 2021, 143, 3019–3032



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ABSTRACT: The phenomenon of surface electrification upon contact is a long-standing scientific puzzle, with for instance written accounts of charged samples of amber attracting feathers dating back to the 600 B.C. Electrostatic hazards associated with electrical insulators subject to mechanical friction are well documented, and the design of commercial products, such as copiers and laser printers, is based on the static charging of electrical insulators. Nonetheless, the physical-chemical origin of this phenomenon remains debated. This Perspective outlines recent advances in our understanding of the mechanism behind contact electrification, as well as the implications for applications.

1. INTRODUCTION

When two materials are brought into contact and then separated, with or without deliberate rubbing, they often become charged. One surface develops a net positive charge, while the other acquires a net negative charge of comparable magnitude. This phenomenon, referred to as contact- or triboelectrification,¹ has widespread practical consequences and applications. For example, it underpins seemingly unrelated phenomena and technologies, such as a car's static zip,² the failure of automotive bearings,³ and the transfer of inks in xerography.⁴ The first written account on the static charging of an insulator is generally attributed to Thales of Miletus, who lived around 600 B.C.^{5,6} The topic of electrostatics became popular in the 18th century after Benjamin Franklin's iconic "Philadelphia kite" experiment,^{7,8} but its systematic study

(8) Zhang, J.; Darwish, N.; Coote, M. L.; Ciampi, S. Static Electrification of Plastics under Friction: The Position of Engineering-Grade Polyethylene Terephthalate in the Triboelectric Series. *Adv. Eng. Mater.* **2020**, 22, 1901201.

(9) Childress, C. O.; Kabell, L. J. Electrostatic Printing System. U.S. Patent 3081698163, 1963.

(10) Iversen, P.; Lacks, D. J. A Life of Its Own: The Tenuous Connection between Thales of Miletus and The Study of Electrostatic Charging. *J. Electrost.* **2012**, 70, 309–311.

(11) Jernegan, M. W. Benjamin Franklin's "Electrical Kite" and Lightning Rod. *N. Engl. Q.* **1928**, 1, 180–196.

(12) Pandey, R. K.; Ao, C. K.; Lim, W.; Sun, Y.; Di, X.; Nakanishi, H.; Soh, S. The Relationship between Static Charge and Shape. *ACS Cent. Sci.* **2020**, 6, 704–714.

A Review of Evaluation, Principles, and Technology of Wearable Electromagnetic Harvesters

Bangze Zhou, Shuchang Zhang, Wei Liu, and Fujun Xu*

2.2. Triboelectric Conversion Mode. When two materials rub or touch together, electrostatic charges will be generated; this phenomenon is called the triboelectric effect.²⁷

Its discovery is attributed to Thales, a former Socratic Greek philosopher, who observed that amber brushed with fur may draw tiny fragments of straw, thread, hair, and other things.⁴³

Although the universal phenomenon of triboelectrification has been known for nearly a thousand years, its mechanism has not been fully studied.⁴⁴ Up to now, a more accepted explanation

(43) Iversen, P.; Lacks, D. J. A life of its own: The tenuous connection between Thales of Miletus and the study of electrostatic charging. *J. Electrostatics* **2012**, *70* (3), 309–311.



Review



Charged for destruction: Advancing cancer treatment with triboelectric nanogenerators – State of the art and prospects



Hamed Abadijoo^{a,b,c}, Reyhaneh Shakibi^d, Farshid Rostami Pouria^{c,1}, Navid Manoochehri^{c,1}, Shima Moharamipour^c, Majid Hasanloo^e, Mohammadreza Ghaderinia^c, Ali Akbar Moosavi-Movahedi^a, Mohammad Abdolahad^{c,f,*}, Mohammad Ali Khayamian^{a,b,**}

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^e Faculty of Veterinary Medicine, University of Tehran, P.O. BOX 14155/6453, Tehran, Iran

^f UT and TUMS Cancer Electronics Research Center, Tehran University of Medical Sciences, Tehran, Iran

2. Summary of TENG and biomedical applications

Maybe Greek philosopher Thales of Miletus is the first one who discovered and utilized the triboelectric effect by rubbing amber and wool [18], but the first TENG with today's meaning was first introduced by Wang et al. [6] that convert mechanical energy into the electricity based on the contact electrification and electrostatic induction. Opposite materials with different electron affinities in triboelectric series could be

[18] P. Iversen, D.J. Lacks, J. Electrost. 70 (2012) 309–311.



Supercapacitors: Overcoming current limitations and charting the course for next-generation energy storage

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Malaysia

Overview/history of supercapacitors

The concept of electrical charge storage on surfaces traces back to ancient Greece, where observations of amber's frictional properties laid the groundwork [20].

However, a molecular understanding of electricity didn't emerge until the 19th century, beginning with Michael Faraday's work and later advanced by Thomson and Millikan's studies on electrons [21]. A crucial development was Pieter van Musschenbroek creation of the Leyden jar, which demonstrated charge separation and storage principles. This device, initially called a "Condenser," later became known as a "Capacitor."

- [20] P. Iversen, D.J. Lacks
J. Electrostat., 70 (2012), pp. 309-311
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Flexoelectricity, Triboelectricity, and Free Interfacial Charges

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1. Introduction

Whenever two insulators (and sometimes metals) rub together, or particles in powders collide, static electricity is generated, a phenomenon called either contact electrification, if there is no sliding, or triboelectricity in the more general case. It was recorded by Thales of Miletus around 585 BC^[1] after rubbing amber with fur^[2] although it may have been known earlier.^[2] The word has roots in the Greek words *tribo*, to rub, and *ēlektron* for amber.

[1] P. Iversen, D. J. Lacks, *J. Electrost.* **2012**, *70*, 309.

Transportation Secretary Pete Buttigieg, Nov. 8, 2021



" if an underpass was constructed such that a bus carrying mostly Black and Puerto Rican kids to a beach — or that would've been — in New York was — was designed too low for it to pass by, that that obviously reflects racism that went into those design choices."

Do Artifacts Have Politics?

IN CONTROVERSIES ABOUT TECHNOLOGY AND SOCIETY, there is no idea more provocative than the notion that technical things have political qualities.

It turns out, however, that the two hundred or so low-hanging overpasses on Long Island were deliberately designed to achieve a particular social effect. Robert Moses, the master builder of roads, parks, bridges, and other public works from the 1920s to the 1970s in New York, had these overpasses built to specifications that would discourage the presence of buses on his parkways. According to evidence provided by Robert A. Caro in his biography of Moses, the reasons reflect Moses's social-class bias and racial prejudice. Automobile-owning whites of "upper" and "comfortable middle" classes, as he called them, would be free to use the parkways for recreation and commuting. Poor people and blacks, who normally used public transit, were kept off the roads because the twelve-foot tall buses could not get through the overpasses. One consequence was to limit access of racial minorities and low-income groups to Jones Beach, Moses's widely acclaimed public park.

Nice beaches on
barrier islands off
south shore



Southern State Parkway is route from New York City to beach





Post



Glenn Kessler
@GlennKesslerWP

Follow



...

This is detailed at length in Robert Caro's Pulitzer Prize-winning book on Robert Moses, "The Power Broker." See especially pages 318-319: "He began to limit access by buses; he instructed Shapiro to build the bridges across his new parkways low -- too low for buses to pass."...



Just Donna
@Crypsis12 · Nov 8, 2021

Is it possible to get a @GlennKesslerWP fact check that structural engineers purposefully built racist overpasses? @redsteeze
@ComfortablySmug x.com/thehill/status...

3:36 PM · Nov 8, 2021

Glenn Kessler is the Washington Post "Fact Checker"

Robert Moses and the saga of the racist parkway bridges

November 10, 2021

Share Print 331



(Susan Walsh/AP)



Analysis by [Glenn Kessler](#)

"Well, our knee jerked. This was obviously a reference to one of the most famous anecdotes in Robert Caro's majestic biography of Robert Moses, "The Power Broker." (A Transportation Department official confirmed that Buttigieg was referring to Caro's Pulitzer-Prize winning work.)"

Robert Moses and the saga of the racist parkway bridges

November 10, 2021

↗ ↘ ↙ 331



(Susan Walsh/AP)



Analysis by [Glenn Kessler](#)

"But then we heard from [Peter Shulman](#), an associate professor of history at [Case Western Reserve University](#). He said that this story has been largely debunked. So we decided to look deeper."

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Peter A. Shulman

Associate Provost for Curriculum, Office of the Provost

Elizabeth and Raymond Armington Professor and Associate Professor of History, Department of History, College of Arts and Sciences

As Associate Provost for Curriculum, Prof. Shulman is responsible for all aspects of the undergraduate curriculum that transcend the individual schools and College. This includes overseeing the operations of the [Unified General Education Requirements \(UGER\)](#), administration of Pre-Major Advising, and the [Explore program](#). He also reviews all undergraduate course action and program action proposals and, in collaboration with the Faculty Senate and other university offices, works on undergraduate advising, program



Email:

peter.shulman@case.edu

Robert Moses and the saga of the racist parkway bridges

November 10, 2021

↗ ↘ □ 331



(Susan Walsh/AP)



Analysis by [Glenn Kessler](#)

"Campanella, a Cornell University historian ... recorded clearances for 20 bridges, viaducts and overpasses on other parkways built at the time and compared them to measures of the 20 original bridges and overpasses on the Southern State Parkway.

'I do believe it is true,' Campanella said 'The lower overpasses on the Southern State parkway are a substantial deviation from precedent.' "

Robert Moses and the saga of the racist parkway bridges

November 10, 2021

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(Susan Walsh/AP)

"[However] Shulman, the professor who brought this debate to our attention, said Campanella's measurements do not confirm the story.

'Bus heights [are] about 118 inches,' he said in an email. 'Vehicles have to have a clearance of less than 94 in to travel on NY parkways at all.'

The Saw Mill, the [NY parkway] with the greatest height cited by Campanella, is 123 in, but the safe clearance is obviously lower, and surely lower than 118 in.' "



Analysis by [Glenn Kessler](#)

Robert Moses and the saga of the racist parkway bridges

November 10, 2021

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(Susan Walsh/AP)

"We should be more careful to double-check on the latest views of historians. Even a Pulitzer Prize-winning book is not always the last word on a subject."



Analysis by [Glenn Kessler](#)

Electric vehicles have a dark side too: Blood batteries and child labour

The Democratic Republic of the Congo, a country that is among the poorest on the planet, is paying a heavy price for the global green energy revolution

SCIENCE

THE EV BOOM IS BEING FUELED BY UNDERPAID, UNDERFED COBALT MINERS

Workers at a Tesla supplier say they can't get enough food or water on the job

By Maddie Stone | Feb 15, 2022, 11:30am EST

JUNE 17, 2022

Keep Child and Slave Labor Sourced Electric Vehicles Out of U.S. Military, Ernst Says

NEWS DEFEAT POVERTY

Mining for Metal Used in Smartphone Batteries Is Causing Birth Defects in DRC

Cobalt poses human rights test for Biden on clean energy

By Jael Holzman, David Iaconangelo | 03/15/2022 07:17 AM EDT

Pollution causing birth defects in children of DRC cobalt miners - study

Researchers link exposure to mining pollutants to greatly increased risk of conditions such as spina bifida and limb abnormalities

Thousands of people in the Democratic Republic of Congo (DRC) are being exposed to dangerous levels of toxic pollution that is causing birth defects in their children as they mine for cobalt used to make rechargeable batteries for smartphones, laptops and electric cars, a new medical study has found.

Research published in the *Lancet* last week found that local people working in mines in the African “copperbelt”, a mining region stretching across Zambia and the DRC, are at significantly higher risk of having children born with serious birth defects.

Researchers from the University of Lubumbashi in the DRC and the universities of Leuven and Ghent in Belgium compared 138 newborn children of families within the copperbelt with 108 children born outside the mining zone in Lubumbashi. It found that the risk of birth defects greatly increased when a parent worked in a copper and cobalt mine.

Metal mining and birth defects: a case-control study in Lubumbashi, Democratic Republic of the Congo

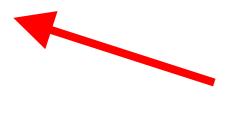
Daan Van Brusselen*, Tony Kayembe-Kitenge*, Sébastien Mbuyi-Musanzayi, Toni Lubala Kasole, Leon Kabamba Ngombe, Paul Musa Obadia, Daniel Kyanika wa Mukoma, Koen Van Herck, Dirk Avonts, Koen Devriendt, Erik Smolders, Célestin Banza Lubaba Nkulu, Benoit Nemery

Summary

Background Widespread environmental contamination caused by mining of copper and cobalt has led to concerns about the possible association between birth defects and exposure to several toxic metals in southern Katanga, Democratic Republic of the Congo (DRC). We therefore aimed to assess the possible contribution of parental and antenatal exposure to trace metals to the occurrence of visible birth defects among neonates.

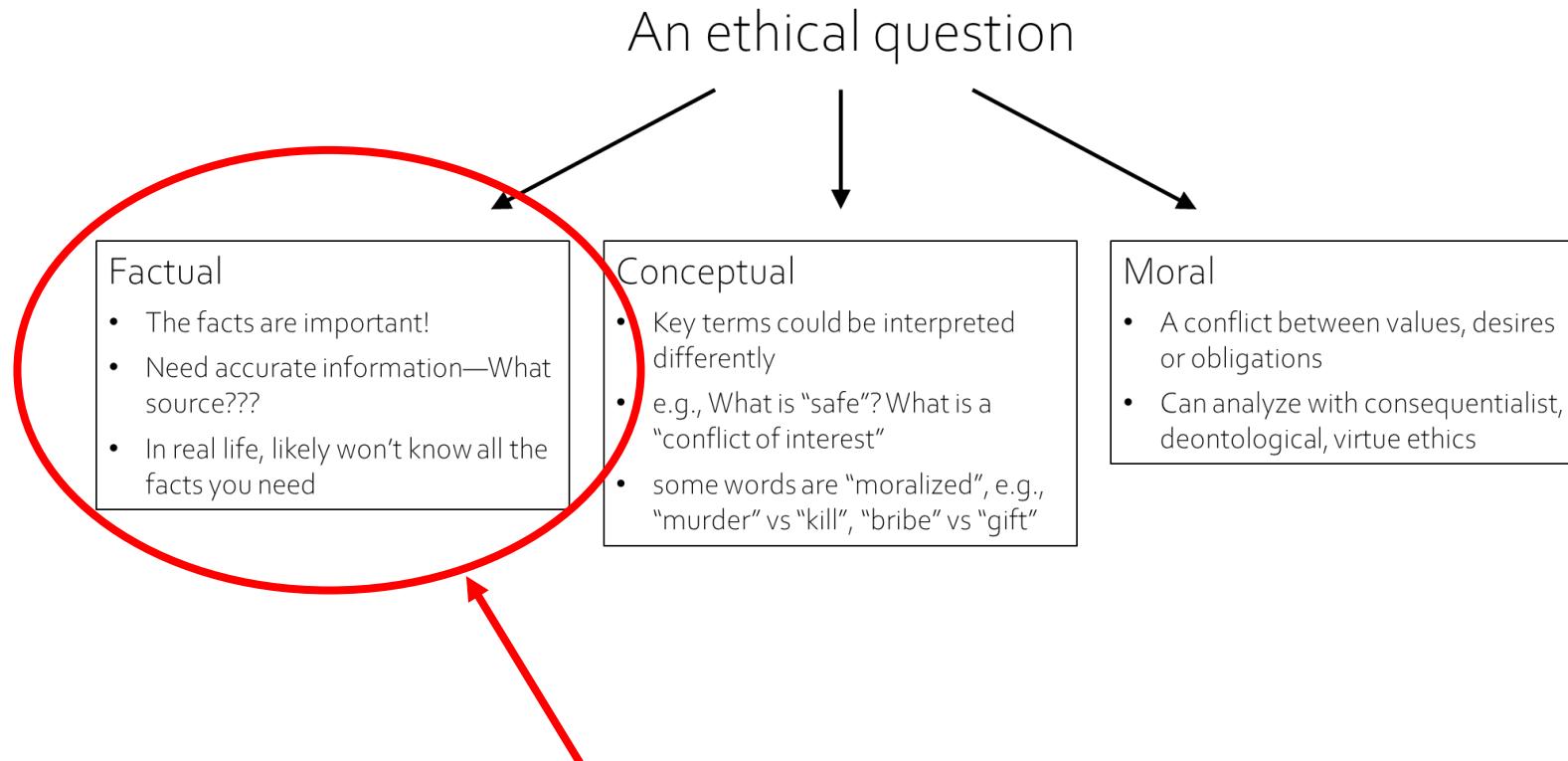
Methods We did a case-control study between March 1, 2013, and Feb 28, 2015, in Lubumbashi, DRC. We included newborns with visible birth defects (cases) and healthy neonates born in the same maternity ward (controls). Mothers were interviewed about potentially relevant exposures, including their partners' jobs. Various trace metals were measured by inductively coupled plasma mass spectrometry in maternal urine, maternal blood, umbilical cord blood, placental tissue, and surface dust at home. Multivariable logistic regression analyses were done to calculate adjusted odds ratios and their 95% CIs (CI).

“We included newborns with visible birth defects (cases) and healthy neonates born in the same maternity ward (controls).”



WRONG!!!!

What is the moral of these stories?



*To get the factual part correct, must be VERY careful about your sources!!!
You should rely on primary sources!*

LANGDON WINNER

(a VERY influential paper – over >7500 citations)

Do Artifacts Have Politics?

IN CONTROVERSIES ABOUT TECHNOLOGY AND SOCIETY, there is no idea more provocative than the notion that technical things have political qualities.

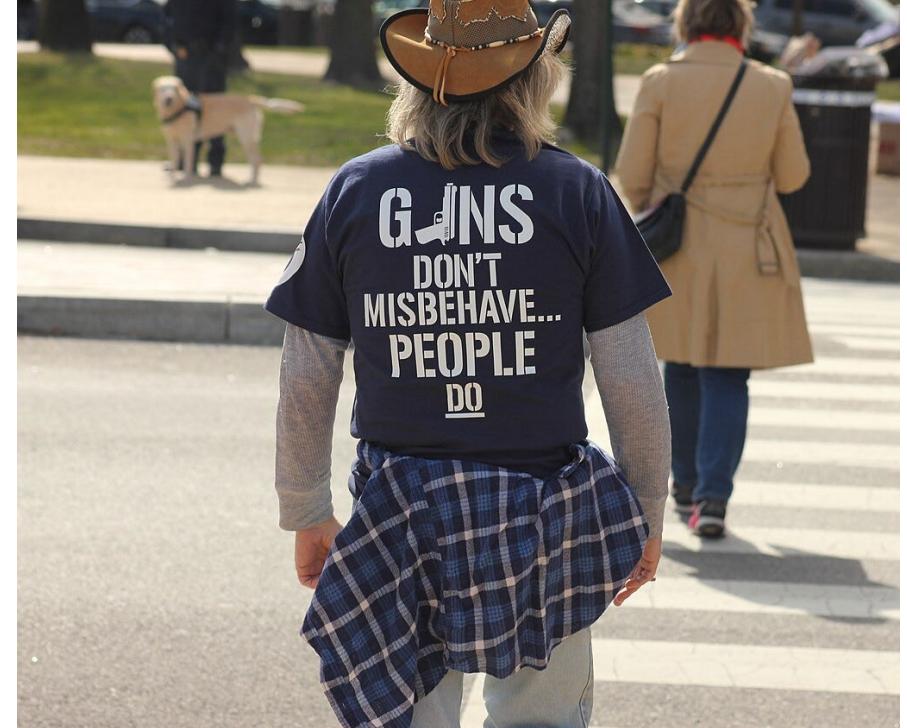
Value-neutrality thesis

Consider what philosophers of technology call the “value-neutrality thesis”, which says that technologies are inherently neutral—they are mere “things” that “don’t care” how they’re used.

If these technologies are used for malicious purposes, we should blame the *user* rather than the technology *itself*.

“Guns don’t kill people. People kill people”

This is a very intuitive idea!! But is it right?



This philosopher is a value-neutrality theorist

Let's think more about the value-neutrality thesis

Now...

Consider the case of nuclear weapons. Someone who accepts the value-neutrality thesis might (have to) argue that "Nuclear weapons don't destroy countries, countries destroy countries"!

Hence, we shouldn't oppose *nuclear proliferation*, just as we shouldn't enact stricter gun laws.

What do you think?

**IF GUNS KILL PEOPLE...
PENCILS MISSPELL WORDS
CARS DRIVE DRUNK &
SPOONS MAKE PEOPLE FAT**

Is the value-neutrality thesis correct?

Consider again the case of guns. You can use a hand gun for many purposes: as a door stop, a paper weight, a decoration in one's house, or an object to stir ingredients in a bowl for dinner—and so on.

But guns weren't designed for these purposes, and they aren't as effective at achieving these ends as other artifacts specifically designed for such purposes. Instead, guns were designed to shoot bullets at ~1,400 mph (depending on the gun) toward a target.

In this sense, the particular design of guns inclines users to use this technology for specific purposes.



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- Our lecture discussed these ideas in terms of guns. You could say the same thing about other technologies: computers, automobiles, headphones, satellites, microscopes, etc.
- Winner argued against value-neutrality, claiming that some technologies have values (“politics”) built into them—these values are inherent in the technologies themselves
- The values of a technology are the result of the design process itself (intentional or inadvertent)
- Philosophers of technology overwhelmingly reject the value-neutrality thesis (but, of course, they might be wrong!)

What do you think about AI and value-neutrality?

News | Article | August 7, 2024

AI has trouble picturing physicians that aren't White men

Author(s): [Richard Payerchin](#)

'Striking' lack of diversity when researchers use artificial intelligence to generate images of doctors.

Artificial intelligence (AI) thinks American physicians look mostly like White men, even as medicine diversifies with doctors who are women and are Asian, Black and Latino, according to a new study.



Article | [Open access](#) | Published: 28 August 2024

AI generates covertly racist decisions about people based on their dialect

[Valentin Hofmann](#)✉, [Pratyusha Ria Kalluri](#), [Dan Jurafsky](#) & [Sharese King](#)✉

[Nature](#) **633**, 147–154 (2024) | [Cite this article](#)

80k Accesses | **421** Altmetric | [Metrics](#)

Does AI inherently take on values described in the documents the AI was trained on?

Isn't this what AI was designed to do (even if it is an unintentional "side effect")

In-class assignment on Canvas

- Access code: winner
- Open notes
- Must work alone
- Must stay in seat, with no talking, until end of class