40,000 Years of Work and Organization

-

What's Next?

Milt Hakel, mhakel@bgsu.edu

I-O, Past and Future

- Quick Tour thru 40,000 Years of Organizing Work
  - Cave Art, and 3 Hours a Day Spent Working
  - Staffing Work in China and the U.S.
  - Minnesota, Hail to Thee
- What's Next?
  - SIOP and Organizational Science
    - Visionary Circle and $100,000 Visionary Grant
    - Horizon Forum and Agenda
  - Go Where There's Trouble
  - Keep Your Sense of Humor
- Let's Talk

Lascaux Cave, discovered 1940

Pont D'Arc,
Ardèche River,
France

Chauvet Cave, discovered 1994

Visit Lascaux and Chauvet

- Neanderthal Lunch
  - Baked Salmon
  - Salmon abounded in French rivers

- Hunter-gatherers worked 3 hours/day to provide for their families

Concerning Technology

- New technology will bring the downfall of the educational system

- Tremendous controversy about the use of written records in teaching (5th century B.C.)

- Use of writing "will create forgetfulness in the learners' souls, because they will not use their memories...."

Socrates, in *Phaedrus*

Clark Kerr

66 institutions have existed continuously since 1530

Roman Catholic Church and Lutheran Church

Parliaments of Iceland and of the Isle of Man
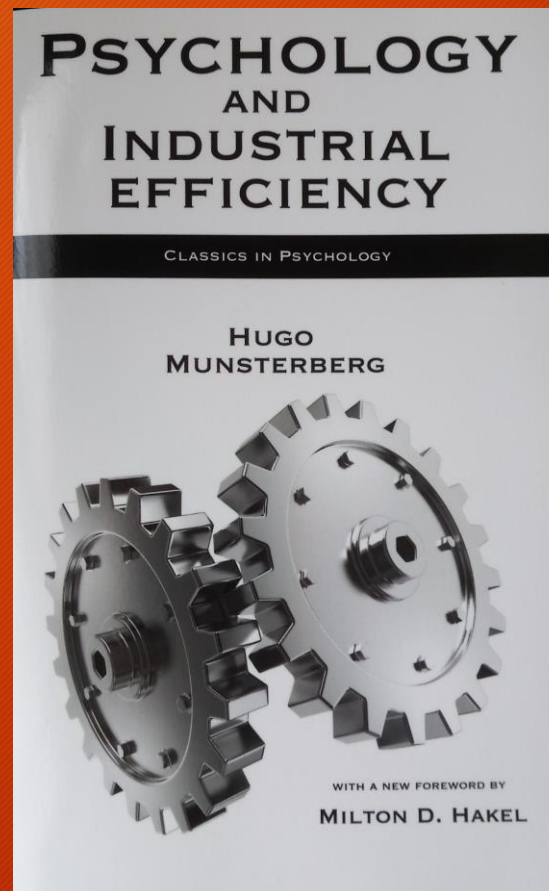
62 universities
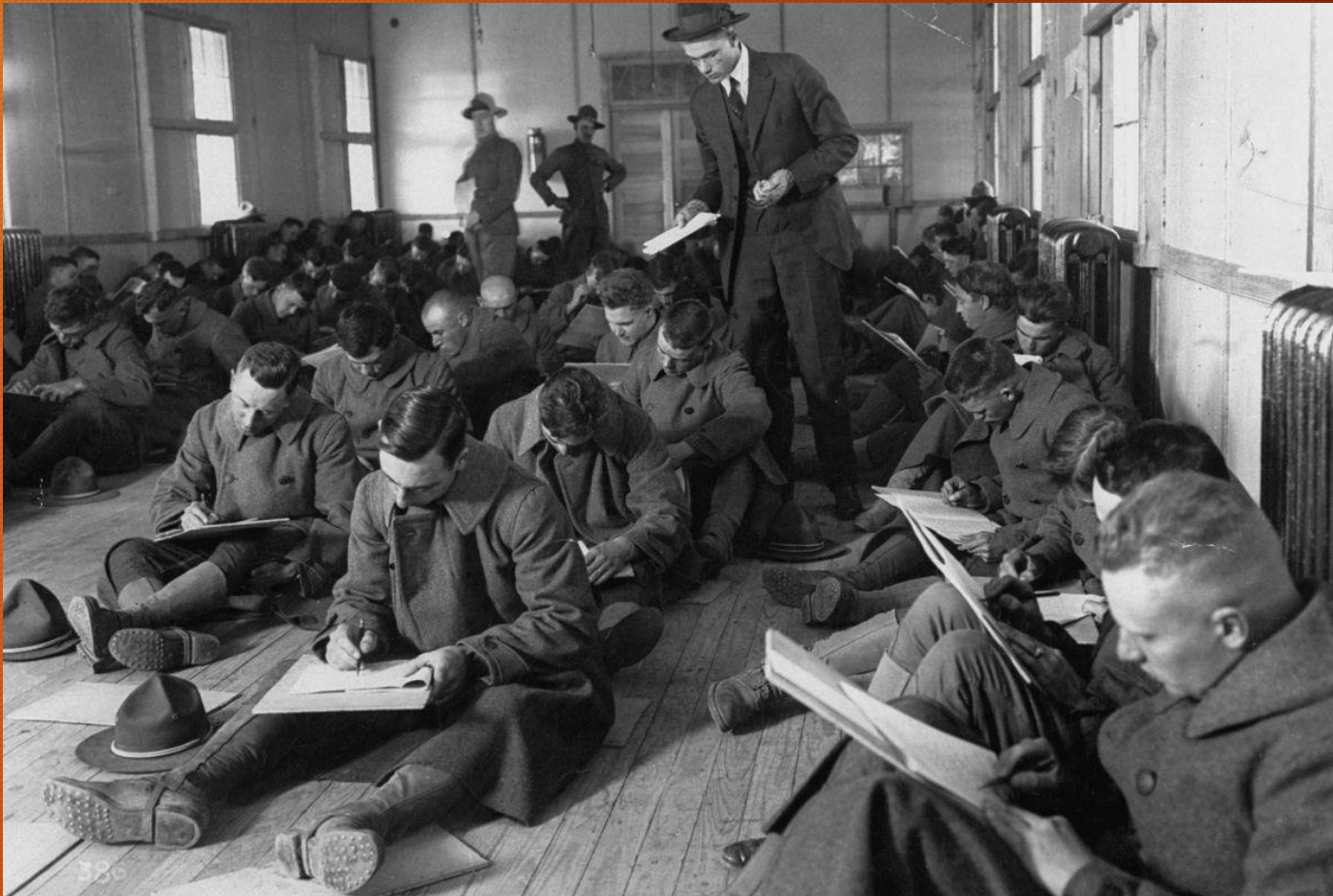
Staffing the Empire, 165 BCE

https://en.wikipedia.org/wiki/Imperial_examination

Industrial Psychology Starts, 1913

Staffing the U.S. Army, 1917

Donald G. Paterson 1918

Minnesota, Hail to Thee

Psychology Department Created in 1917, with Robert M. Yerkes as Chair

Chair Richard M. Elliott Recruits Donald G. Paterson from the Scott Company, 1921

The Minnesota Point of View

- Each Person is Unique and Different

- Objective, Quantified Assessment of the Person and Environment

- Gauging the Fit
  - Less Interest in Changing the Person and More Interest in Finding the "Right" Environment for the Person

- Nondiscriminatory Practice
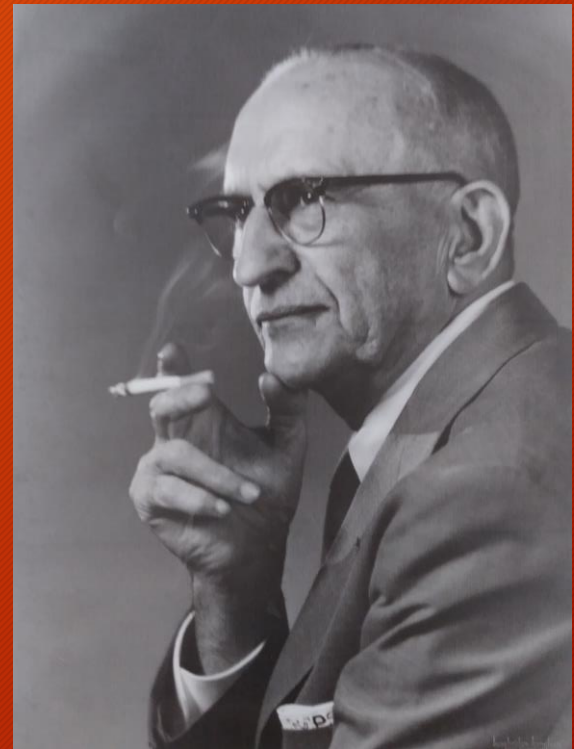
Paterson, D.G. (1957). The conservation of human talent. *Am. Psychologist*, 12, 134-144

Praxis

Synthesis of Theory and Practice Without Presuming the Primacy of Either

What's Next?

More PRAXIS is needed

Benjamin Franklin, 1780

"The rapid progress true science now makes occasions my regretting sometimes that I was born so soon. It is impossible to imagine the height to which may be carried, in a thousand years, the power of man over matter.

O that moral science were in a fair way of improvement, that men would cease to be wolves to one another, and that human beings would at length learn what they now improperly call humanity."

Lewis Thomas, "Making Science Work"

"The social scientists have a long way to go to catch up, but they may be up to the most important scientific business of all, if and when they finally get to the right questions.

Our behavior toward each other is the strangest, most unpredictable, and almost entirely unaccountable of all the phenomena with which we are obliged to live. In all of nature there is nothing so threatening to humanity as humanity itself."

David Deutsch on Creativity

"Of all the countless biological adaptations that have evolved on our planet, creativity is the only one that can produce scientific or mathematical knowledge, art or philosophy. Through the resulting technology and institutions, it has had spectacular physical effects – most noticeably near human habitations, but also further afield: a substantial portion of the Earth's land area is now used for human purposes. Human choice – itself a product of creativity – determines which other species to exclude and which to tolerate or cultivate, which rivers to divert, which hills to level, and which wildernesses to preserve. In the night sky, a bright, fast-moving spot may well be a space station carrying humans higher and faster than any biological adaptation can carry anything. Or it may be a satellite through which humans communicate across distances that biological communications has never spanned, using phenomena such as radio waves and nuclear reactions, which biology has never harnessed. The unique effects of creativity dominate our experience of the world." (p. 398)

David Deutsch, *The Beginning of Infinity: Explanations that Transform the World*, 2011

SIOP and Organizational Science

Our Applied Organizational Science: Strong and Growing

SIOP Has Never Been Stronger

Unwavering Focus on Praxis

Relentless Emphasis on Evidence

SIOP Membership: Around 10,000 (62% Pay Full Dues)

SIOP is now more "outward facing" than ever before

Let's Create a Society for Organizational Science

What would you do if you had $100,000 to shape the future world of work?

Introducing the Visionary Circle, a venture to build a renewable and continuing source of funding for I-O research and development.

High Level Overview – How We Will Do It:

- Collect venture philanthropic capital by recruiting Visionary Donors
- Call for Visionary Grant Proposals
- Visionary Donors Select Visionary Grant Awardee(s)
- Implement findings
- Repeat Every Year

Rapid advancement in I-O psychology and the organizational sciences now is surely needed. The mania about artificial intelligence systems and big data is at flood tide, with no shortage of need for critical and deep thinking about creating smarter workplaces. We face great challenges in the workplace from the changing nature of work to sexual harassment in the workplace to a multi-generational workforce. These issues stretch beyond companies and cultures and demand the best thinking, collaboration, and collective attention.

SIOP and Organizational Science

Visionary Circle 1.0

Herman Aguinis	Allan H. Church	Karen M. Grabow	Eden King	David B. Peterson	Evan Sinar
Alexander Alonso	Adrienne Colella	Mirian Graddick-Weir	Richard Klimoski	Ronald F. Piccolo	Puranjaya Singh
John Arnold	Michael Coovert	Alicia Grandey	Deirdre Knapp	Jeffrey Quinn	Marc B. Sokol
Talya Bauer	Paul Damiano	Paul Green	Kurt Kraiger	Douglas Reynolds	Michael Sturman
Thomas Becker	Sandra Davis	Rick Guzzo	Allen I. Kraut	Denise Rousseau	Scott Tannenbaum
Michael Beer	Craig Dawson	Lee Hakel	Gary Latham	Ann Marie Ryan	Nancy T. Tippins
Wally Borman	David V. Day	Milton Hakel	William Macey	Lise Saari	Tracy Vanneman
Laura Koppes Bryan	Angelo DeNisi	Leslie Hammer	Cindy McCauley	Eduardo Salas	Mo Wang
Michael Burke	Michelle Donovan	Michelle (Mikki) Hebl	S. Morton McPhail	Jeffrey Saltzman	Jack Wiley
William Byham	Pat Engelhardt	Robert Hogan	William Mobley	Benjamin Schneider	Marta C. Wilson
Paula Caligiuri	Alexis Fink	Leaetta Hough	Robert F. Morrison	John C. Scott	Amy Wrzesniewski
John Campbell	Mark C. Frame	Andrew Imada	Fred Oswald	James Sharf	Sheldon Zedeck
Michael Campion	Charlotte Fritz	Rick Jacobs	Karen B. Paul	William Shepherd	
Stephen Cerrone	Julie Fuller	P. Richard Jeanneret	Cheryl Paullin	Elizabeth Shoenfelt	

Horizon Forum

- What's on your horizon? What do you see coming that keeps you awake at night?

- Interviews with CHROs about trends affecting one's industry and desired projects to yield better practice.

- Accenture, AmEx, ADM, Corning, HP, Ingersoll-Rand, IBM, Marriott, Medtronics, Target

- Research Agenda was formulated at a small group meeting in Charlotte, Feb. 27, 2019

SIOP and Organizational Science

Horizon Forum Agenda

- Leadership – Development and Selection of Future Leaders (including workforce engagement, responsible leadership and creating an environment of continuous learning)

- Diversity and Inclusion (including changing demographics, multigenerational and global workforces)

- New Ways of Working (including the impact of technology on work and the workforce as seen in AI, robotics, telework, and global connectivity, etc.)

- OVERARCHING NEED: Bridging the Science/Practice Gap

  How do we take a research question and shorten the cycle time between gathering knowledge/evidence and implementing actionable results (i.e., rapid prototyping, agile inventions, action incubators)?

SIOP and Organizational Science

On Meta-Analysis

"While meta-analysis may be a step toward an 'objective' summarization of the state of the art in a given scientific area, I get the impression that at least some folks think the method somehow will facilitate arriving at scientific 'truth.'

At its very best, meta-analysis cannot determine what is *true*, it only can attempt to measure what *is*.

If we constantly keep in mind that, had meta-analysis been around at the time, it would have confirmed that planet Earth was flat and the center of the universe, we'll be all right."

Bernard J. Fine, *Science*, 1990, *250*, 494.

David Deutsch on Theory

"I have often thought that the nature of science would be better understood if we called theories 'misconceptions' from the outset, instead of only after we have discovered their successors. Thus we could say that Einstein's Misconception of Gravity was an improvement on Newton's Misconception, which was an improvement on Kepler's. The neo-Darwinian Misconception of Evolution is an improvement on Darwin's Misconception, and his on Lamarck's. If people thought of it like that, perhaps no one would need to be reminded that science claims neither infallibility nor finality. " (p. 446)

David Deutsch, *The Beginning of Infinity: Explanations that Transform the World*, 2011

All evils are caused by insufficient knowledge

David Deutsch presents this statement as the principle of optimism, writing:

"Optimism is, in the first instance, a way of explaining failure, not prophesying success. It says that there is no fundamental barrier, no law of nature or supernatural decree, preventing progress. Whenever we try to improve things and fail, it is not because the spiteful (or unfathomably benevolent) gods are thwarting us or punishing us for trying, or because we have reached a limit on the capacity of reason to make improvements, or because it is best that we fail, but always because we did not know enough, in time." (p. 212)

David Deutsch, *The Beginning of Infinity: Explanations that Transform the World*, 2011

"Go Where There's Trouble"
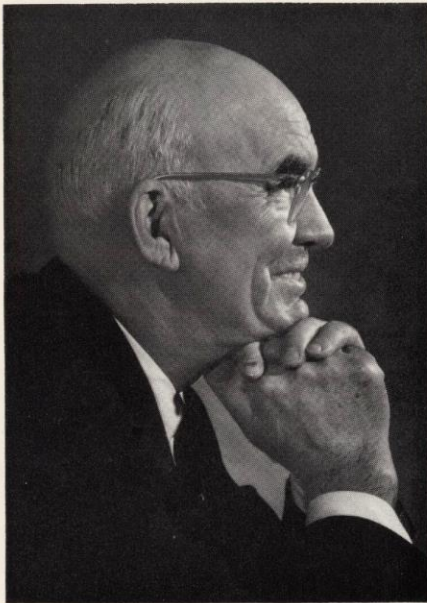
Here's Trouble

- Flat Wages
- Aging Workforce
- Migration
- Mass Incarceration
- Tribalism, Ethnocentrism, Nationalism
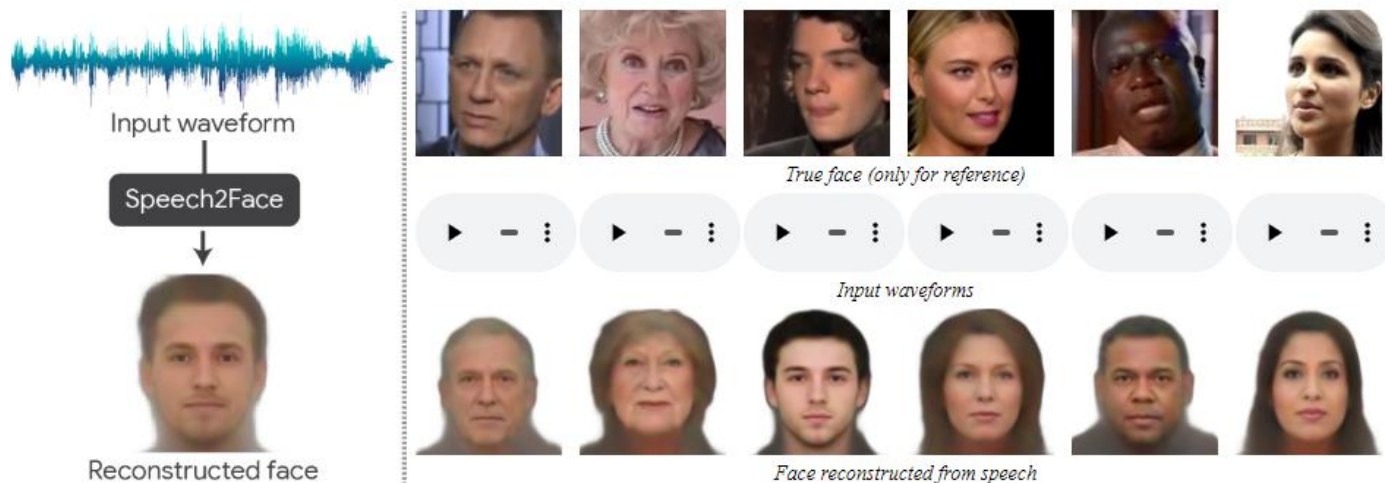- Climate Change
- Genetic Engineering
- Fake News and Broken Trust

https://speech2face.github.io/

IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2019

Speech2Face: Learning the Face Behind a Voice

Tae-Hyun Oh[*][†]   Tali Dekel[*]   Changil Kim[*][†]   Inbar Mosseri   William T. Freeman[†]   Michael Rubinstein   Wojciech Matusik[†]

[†] MIT CSAIL

Input waveform

Speech2Face

Reconstructed face

True face (only for reference)

Input waveforms

Face reconstructed from speech

*We consider the task of reconstructing an image of a person's face from a short input audio segment of speech. We show several results of our method on VoxCeleb dataset. **Our model takes only an audio waveform as input** (the true faces are shown just for reference). Note that our goal is not to reconstruct an accurate image of the person, but rather to recover characteristic physical features that are correlated with the input speech.*

https://speech2face.github.io/

True face (only for reference)

Input waveforms

Face reconstructed from speech

Here's Deep Trouble…

#1 NEW YORK TIMES BESTSELLER

FASCISM

A WARNING

MADELEINE ALBRIGHT

Also, see Victor Klemperer,
*I Will Bear Witness : A
Diary of the Nazi Years*

The Politics Industry

Recent Trouble

2008 Democratic Convention

https://www.hbs.edu/competitiveness/Documents/why-competition-in-the-politics-industry-is-failing-america.pdf

SEPTEMBER 2017

WHY COMPETITION IN THE POLITICS INDUSTRY IS FAILING AMERICA
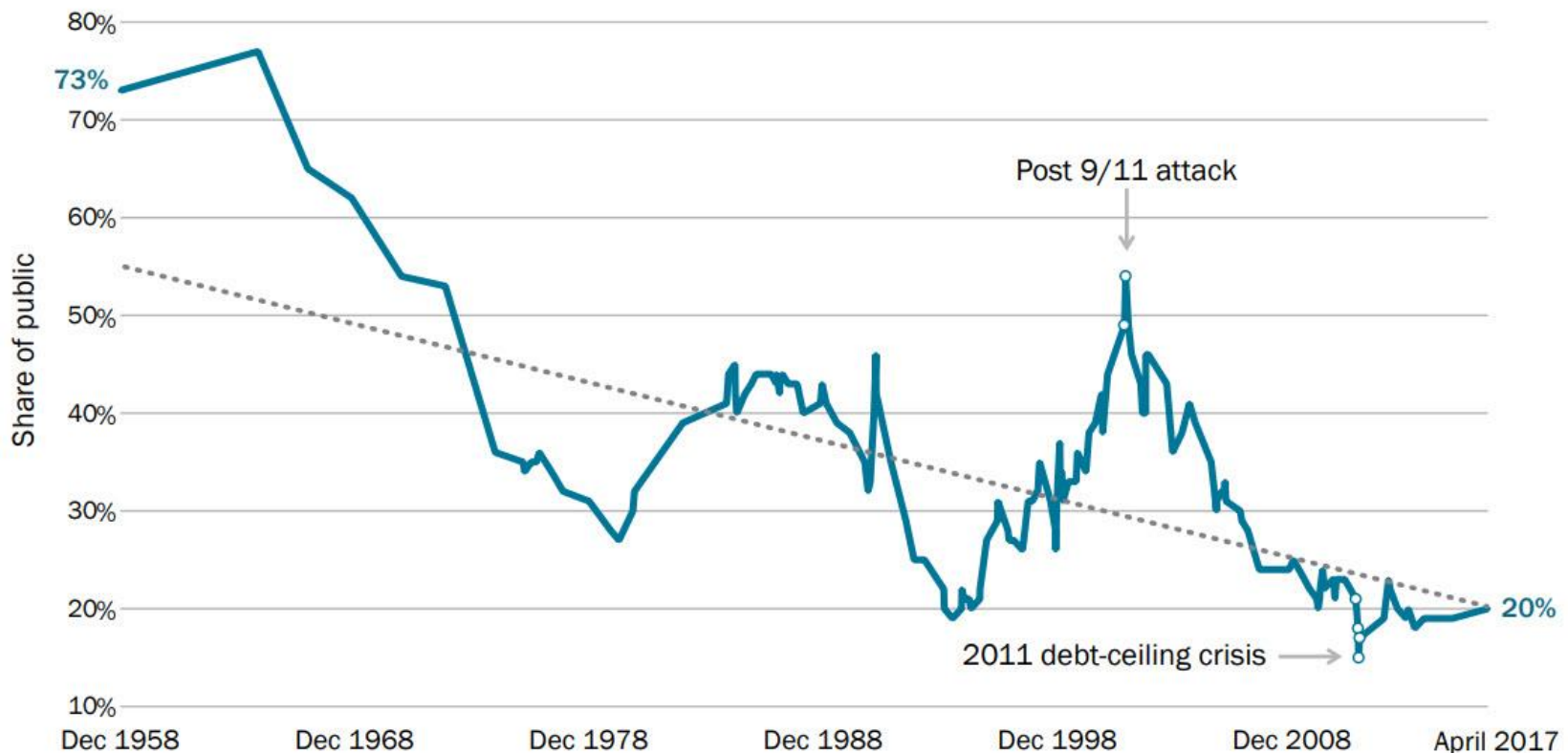
A strategy for reinvigorating our democracy

Katherine M. Gehl and Michael E. Porter

"I'm from Govt, Here to Help You"

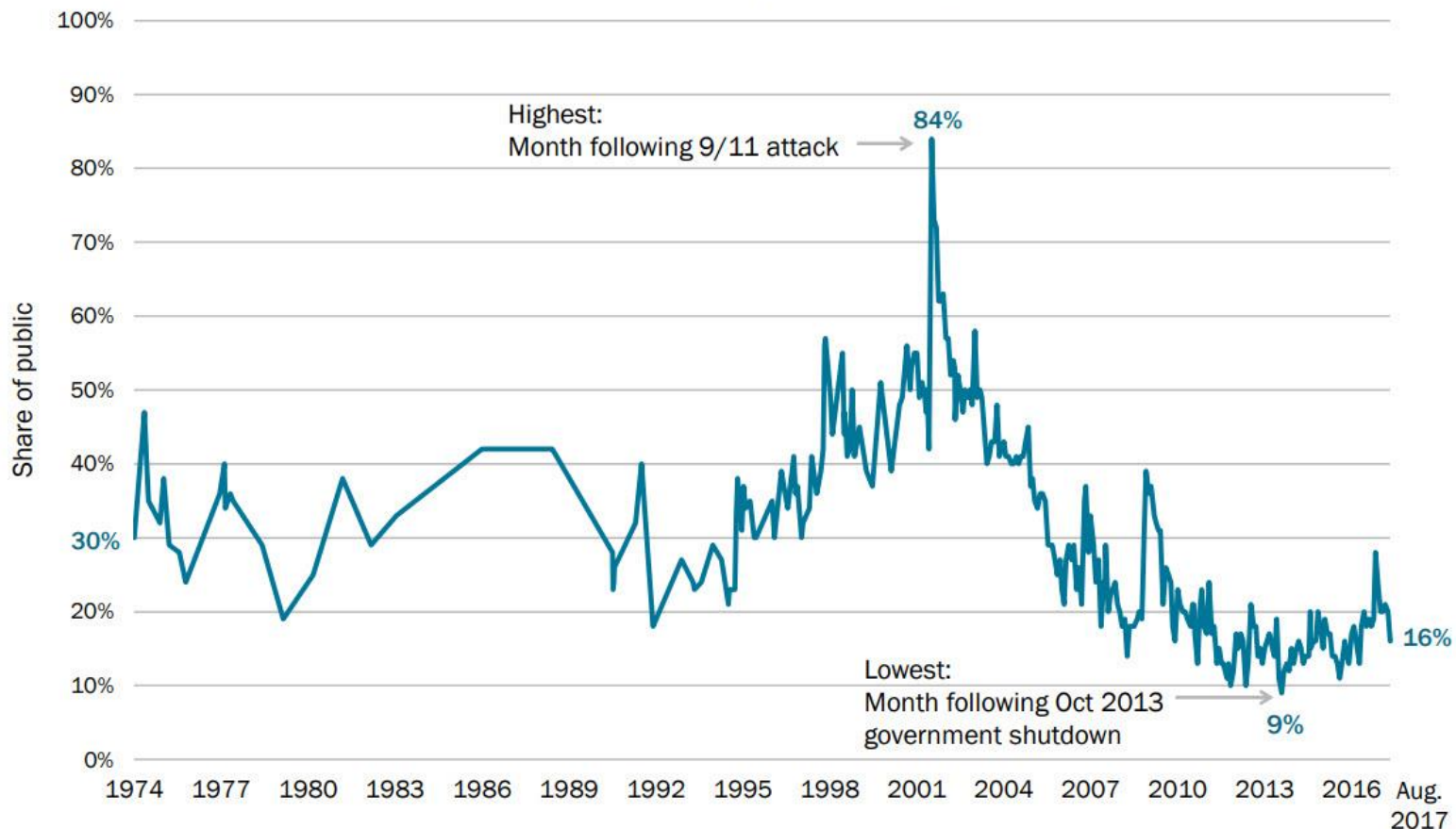**FIGURE 1: DECLINING PUBLIC TRUST IN THE FEDERAL GOVERNMENT**

As of April 2017, about one in five Americans trust the federal government always or most of the time

Post 9/11 attack

2011 debt-ceiling crisis

Share of public

80%
73%
70%
60%
50%
40%
30%
20% — 20%
10%

Dec 1958   Dec 1968   Dec 1978   Dec 1988   Dec 1998   Dec 2008   April 2017

"I'm Mad as Hell, and I'm Not....

FIGURE 2: LOW CONGRESSIONAL JOB APPROVAL RATINGS IN PAST DECADE

As of August 2017, 16% of Americans approve of the way Congress is handling its job

Highest:
Month following 9/11 attack → 84%

Lowest:
Month following Oct 2013 government shutdown → 9%

16%

Share of public

1974 1977 1980 1983 1986 1989 1992 1995 1998 2001 2004 2007 2010 2013 2016 Aug. 2017

"Base" is a 4-letter Word

**FIGURE 3: INCREASING UNFAVORABLE OPINION OF THE MAJOR PARTIES**

As of January 2017, nearly half of the public holds an unfavorable opinion of the Democratic and Republican parties
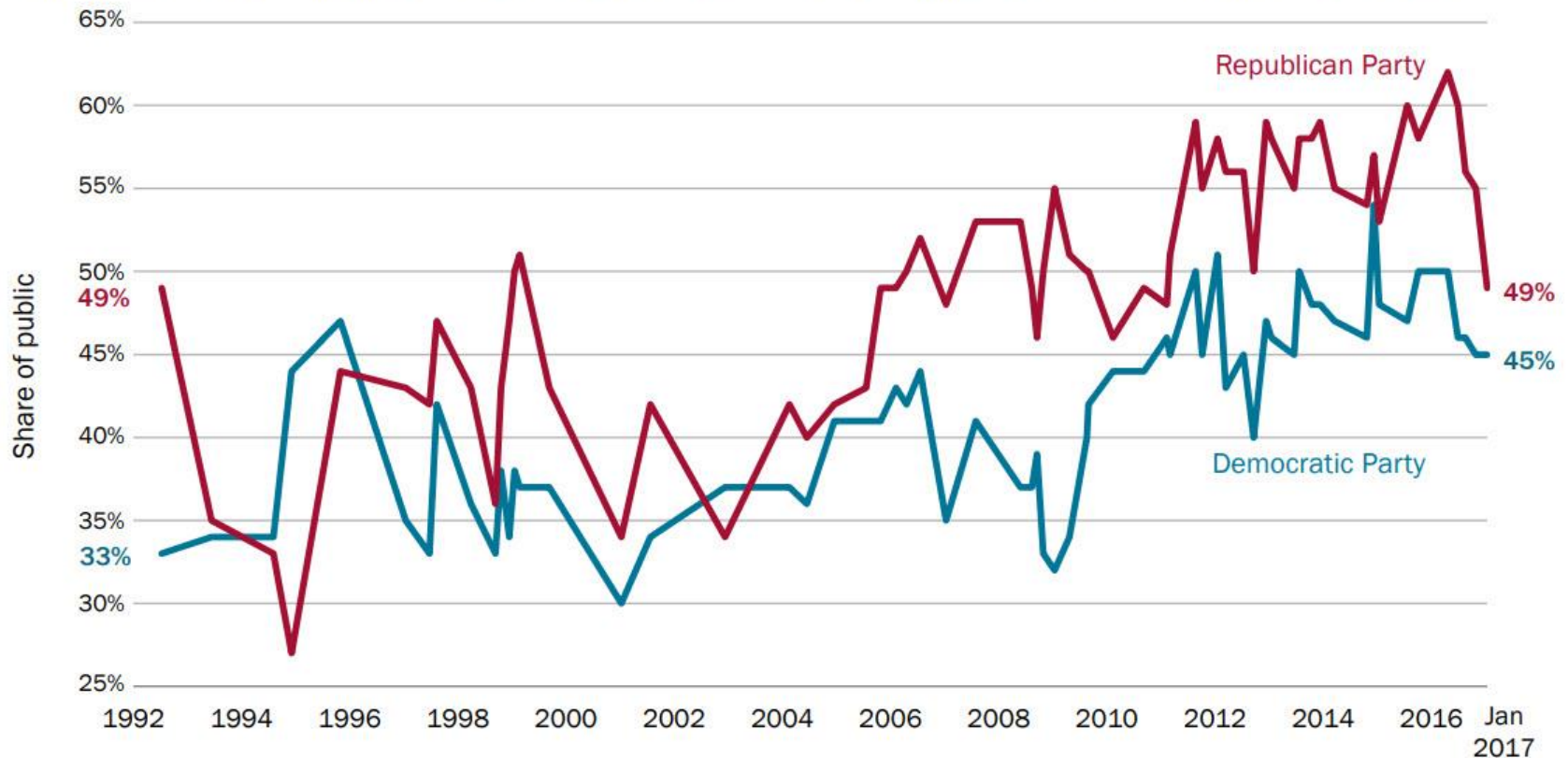
The Rise of the Independents

FIGURE 4: RISING PROPORTION OF AMERICANS IDENTIFYING THEMSELVES AS INDEPENDENTS

As of 2016, nearly 4 in 10 Americans identify as Independent, relative to roughly 3 in 10 for both Democrats and Republicans.

Starting in 1988, Gallup moved from in-person to telephone polling.
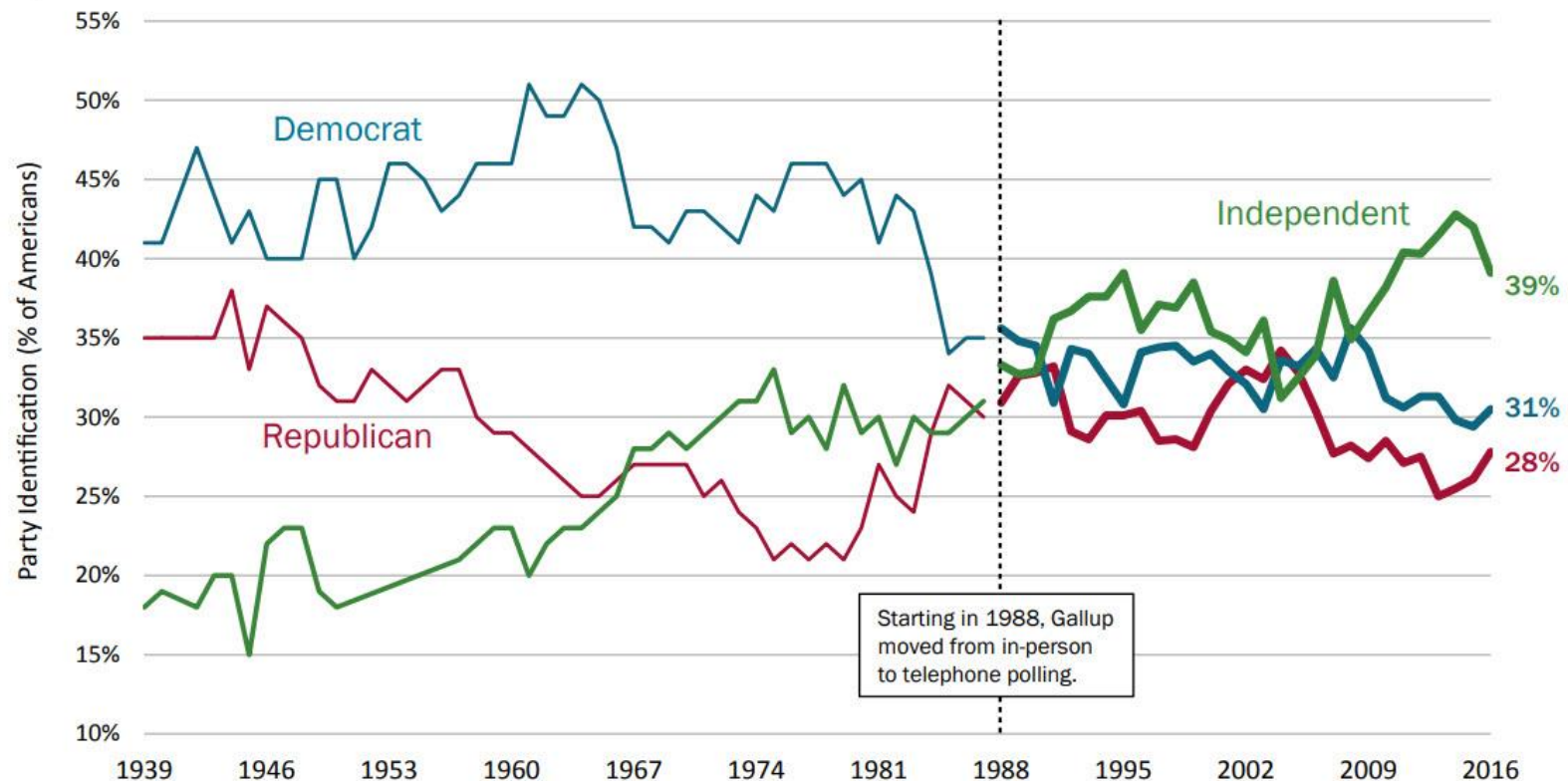
Reforming the Politics Industry

- Adopt Nonpartisan Top-Four Primary Elections
  - California and Washington now have Top-Two primaries
- Institute Ranked-Choice Instant Runoff Balloting
  - Maine
  - APA and SIOP
- Institute Nonpartisan Redistricting
- Reform Money in Politics – 100% Spending Transparency
- Open Up Competition Without Waiting for Structural Reforms – "Senate Fulcrum Strategy"

https://www.hbs.edu/competitiveness/Documents/why-competition-in-the-politics-industry-is-failing-america.pdf

Deutsch on Postmodernism

"One currently influential philosophical movement goes under various names such as postmodernism, deconstructionism, and structuralism, depending on historical details that are unimportant here. It claims that because all ideas, including scientific theories, are conjectural and impossible to justify, they are essentially arbitrary: they are no more than stories, known in this context as 'narratives. Mixing extreme cultural relativism with other forms of anti-realism, it regards objective truth and falsity, as well as reality and knowledge of reality, as mere conventional forms of words that stand for an idea's being endorsed by a designated group of people such as an elite or consensus, or by a fashion or other arbitrary authority. And it regards science and the Enlightenment as no more than one such fashion, and the objective knowledge claimed by science as an arrogant cultural conceit.

Deutsch on Postmodernism (cont.)

"Perhaps inevitably, these charges are true of postmodernism itself: it is a narrative that resists rational criticism or improvement, precisely because it rejects all criticism as mere narrative. Creating a successful postmodernist theory is indeed purely a matter of meeting the criteria of the postmodernist community – which have evolved to be complex, exclusive and authority-based. Nothing like that is true of rational ways of thinking: creating a good explanation is hard not because of what anyone has decided, but because there is an objective reality that does not meet *anyone's* prior expectations, including those of authorities. The creators of bad explanations such as myths are indeed just making things up. But the method of seeking good explanations creates an engagement with reality, not only in science, but in good philosophy too – which is why it works, and why it is the antithesis of concocting stories to meet made-up criteria." (p. 314)
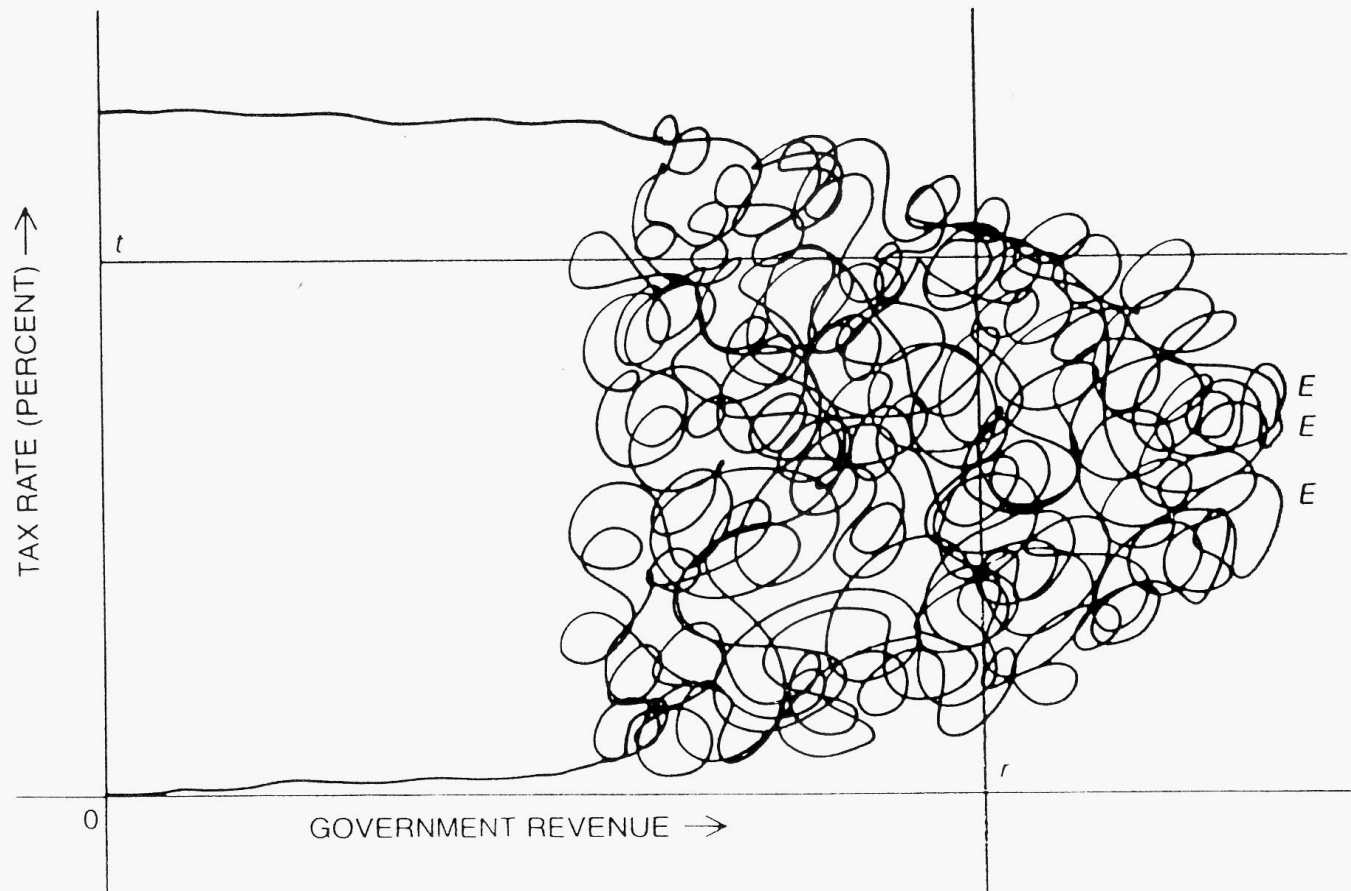
David Deutsch, *The Beginning of Infinity: Explanations that Transform the World*, 2011

Keep Your Sense of Humor
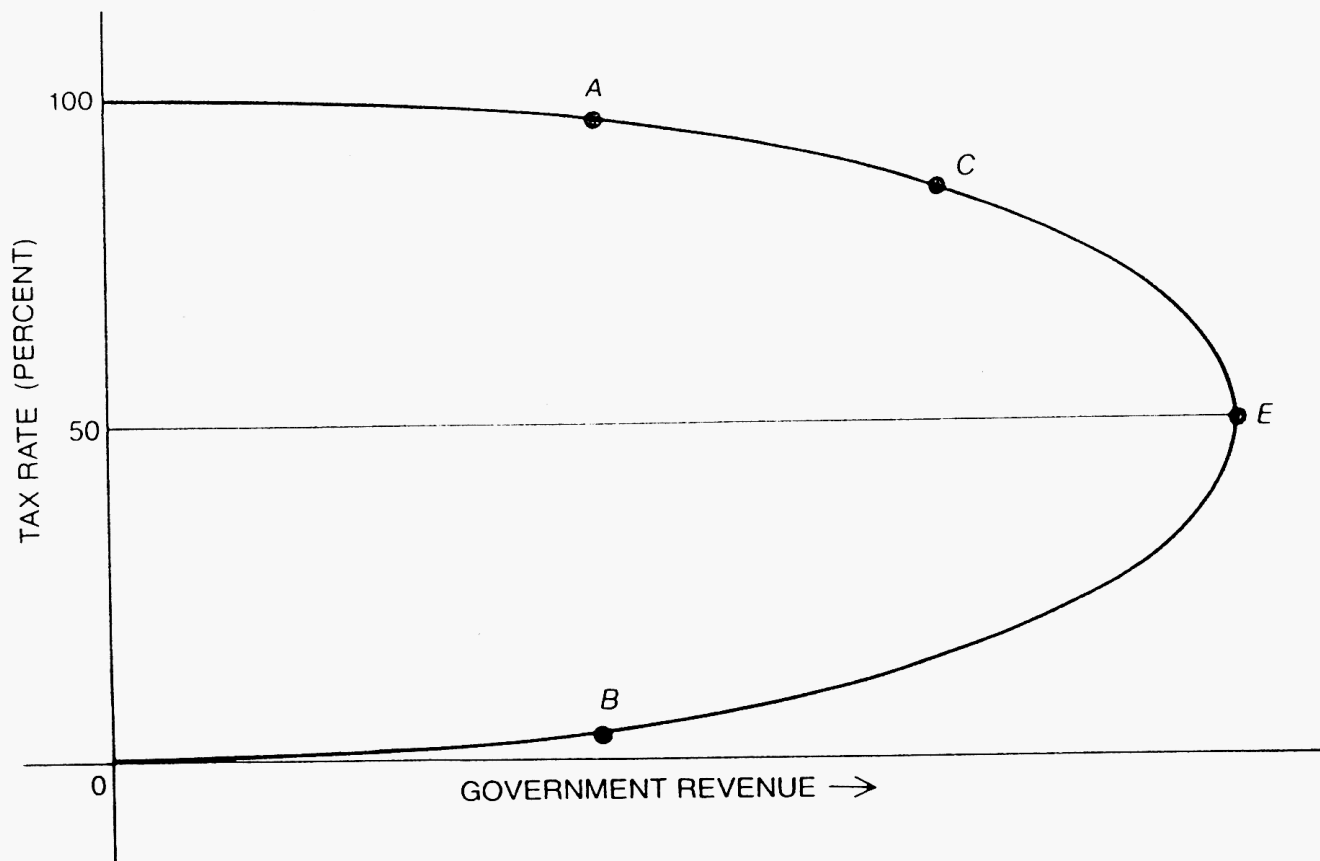
The Laffer curve

Keep Your Sense of Humor

The neo-Laffer (NL) curve

Hiawatha Designs an Experiment

Hiawatha, mighty hunter,
He could shoot ten arrows upward,
Shoot them with such strength and swiftness
That the last had left the bow-string
Ere the first to earth descended.

Maurice G. Kendall, 1959, *The American Statistician* **13**: 23-24.

Keep Your Sense of Humor

The Song of a Consultant

From the towers made of ivory
to the land of troubled business
came the well-equipped consultant
with a multitude of methods
based on elegant statistics
(to the laymen all-confusing)
to explore the workers' problems
and the cause of low production.

Steven E. Mayer and Dale O. Jorgenson, *Personnel Psychology*, 1975, pp. 389-392.

Keep Your Sense of Humor

Jack Matson, Mech Engr 101

- Always Prefer Intelligent Fast Failure

- To Slow Stupid Failure

Keep Your Sense of Humor

40,000 Years of Work and Organization – What's Next?

Let's Talk

Suggested Reading and Viewing

Dean Acheson, *Present at the Creation: My Years in the State Department*

> "Had I been present at the creation, I would have given useful hints for the better ordering of the universe." Alfonso XII, King of Spain

Walter Russell Mead, *Special Providence: American Foreign Policy and How It Changed the World*

Hamiltonian, Jeffersonian, Jacksonian, and Wilsonian perspectives on Democracy, 2001

> "When God closes the books on Judgment Day, one of the great questions to be answered will be whether zeal and idealism were responsible for more human suffering than were sloth and greed." (p. 289)

David Warsh, *Knowledge and the Wealth of Nations*

Illuminating network effects and the defeat of 'diminishing returns', 2006

William Bernstein, *A Splendid Exchange: How Trade Shaped the World*

A history of global trade, and the role of free trade, 2008

Walter Isaacson, *The Innovators*

How hackers, geniuses, and geeks created the digital revolution, 2014

James Gleick, *The Information: A History, A Theory, A Flood*

From African talking drums and French semaphores to Claude Shannon and the Internet, 2011

Jon Gertner, *The Idea Factory: Bell Labs and the Great Age of American Innovation*

How we've gotten smarter through technology, 2012

Sidhartha Mukherjee, *The Gene: An Intimate History*

Deciphering the master code that makes and defines humans, 2016

Ed Yong, *I Contain Multitudes: The Microbes Within Us and a Grander View of Life*

Bacteria and microbes ain't all bad – in fact, we can't live without them, 2016

John McPhee, *Uncommon Carriers*

The literate and literary side of job analysis. 2006

Werner Herzog, *Cave of Forgotten Dreams*

Movie in 3D, showing oldest human-painted images yet discovered, 2011

Stephen Hawking, *Brief Answers to Big Questions*

Education and science "in danger now more than ever before," 2018

Listen to the audiobook version

David Christian, *The History of Our World in 18 Minutes*

TED Talk, 2011 – the BIG HISTORY Project gateway,

https://www.ted.com/talks/david_christian_big_history#t-1040880

TED Talks

Pick them at random, or follow your interests, at TED.com

Gavin Menzies, *1421, The Year China Discovered America*

  Admiral Zheng He explores the Indian, Atlantic, and Pacific Oceans. 2002

James Lovelock, ozone depletion and *The Gaia hypothesis*

Watch a BBC documentary https://www.youtube.com/watch?v=QqwZJDEZ9Ng

David Deutsch, *The Beginning of Infinity: Explanations that Transform the World*

  All evils are caused by insufficient knowledge, 2011

Dava Sobel, *The Glass Universe*

  How ladies of the Harvard Observatory took the measure of the stars, 2018

Cathy O'Neil, *Weapons of Math Destruction*

  How Big Data increases inequality and threatens democracy, 2016

Jennet Connant, *109 East Palace: Robert Oppenheimer and the Secret City of Los Alamos*

A history of the Manhattan Project, 2005

Victor Klemperer, *I Will Bear Witness : A Diary of the Nazi Years*

What's happening & who to trust (Volume 1 1933 – 1941),

The final solution (Volume 2 1942 – 1945)

Sonia Purnell, *A Woman of No Importance*

Biography of Virginia Hall, a spy who helped win WW2, 2019

Nassim Nicholas Taleb, *The Black Swan: The Impact of the Highly Improbable*

How improbable events cause massive consequences,

and our blindness before they happen. 2010

Hans Rosling, The Best Stats You've Ever Seen

Edward Tufte, *The Visual Display of Quantitative Information*

Napoleon's 1812-13 campaign in Russia, 422,000 invade and 10,000 return

TABLEAU GRAPHIQUE de la température en degrés du thermomètre de Réaumur au dessous de zéro.