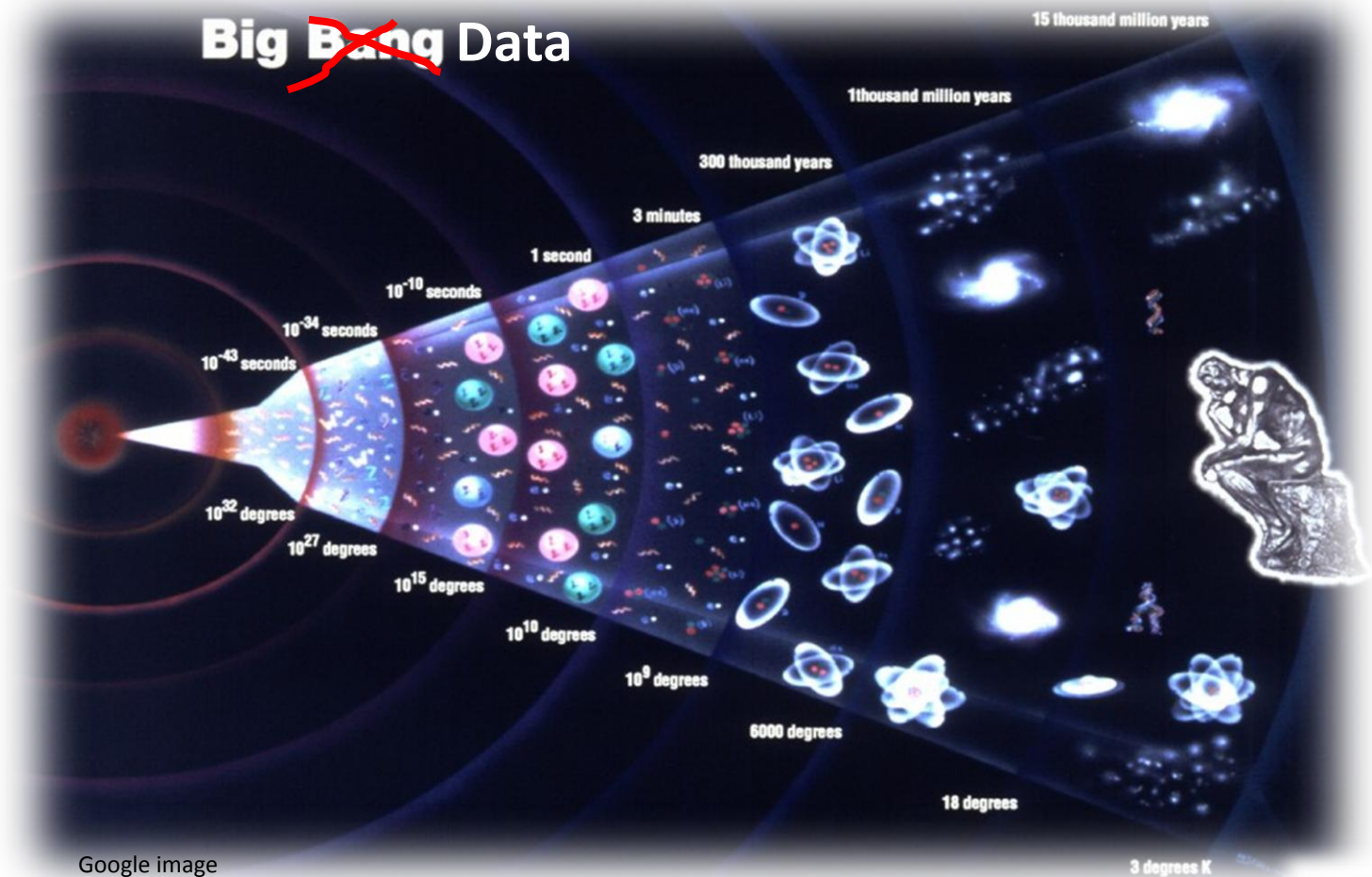


From Big Brother to Big Data: An ethical reflection on a new emerging field

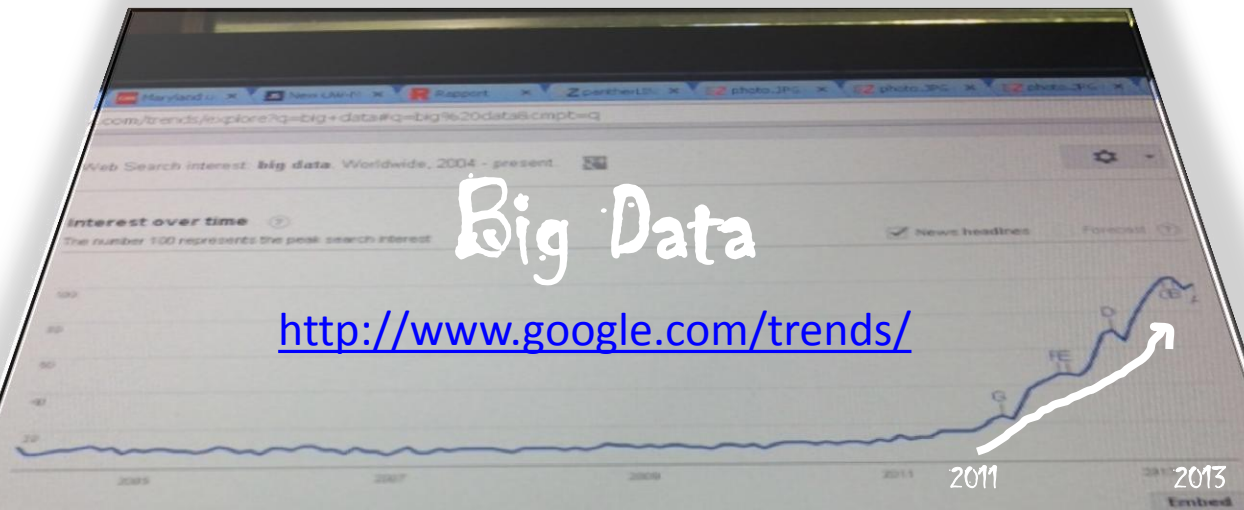


Johannes Britz



Big Data

<http://www.google.com/trends/>



Regional interest



View change over time

Embed

Related terms

	Top	Rising
data analytics	100	
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Embed

90% of all information generated after 2010

Facebook uploads more than 10 mil photos per hour

Click 'like' button nearly 3 billion times a day

Tweets: more than 400 million a day

In 2000 only 25% of information in digital format now 98%

If all information now being stored on CD-Rom: 5 separate piles stretch to the moon



Schonberger & Cukier, 2013



DURING THE FIRST DAY OF A BABY'S LIFE, THE AMOUNT OF DATA GENERATED BY HUMANITY IS EQUIVALENT TO 70 TIMES THE INFORMATION CONTAINED IN THE LIBRARY OF CONGRESS.

EACH OF US NOW LEAVES A TRAIL OF DIGITAL EXHAUST, AN INFINITE STREAM OF PHONE RECORDS, TEXTS, BROWSER HISTORIES, GPS DATA, AND OTHER INFORMATION, THAT WILL LIVE ON FOREVER.

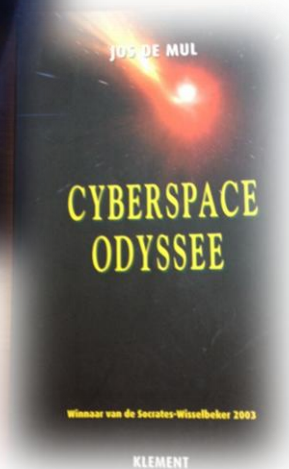
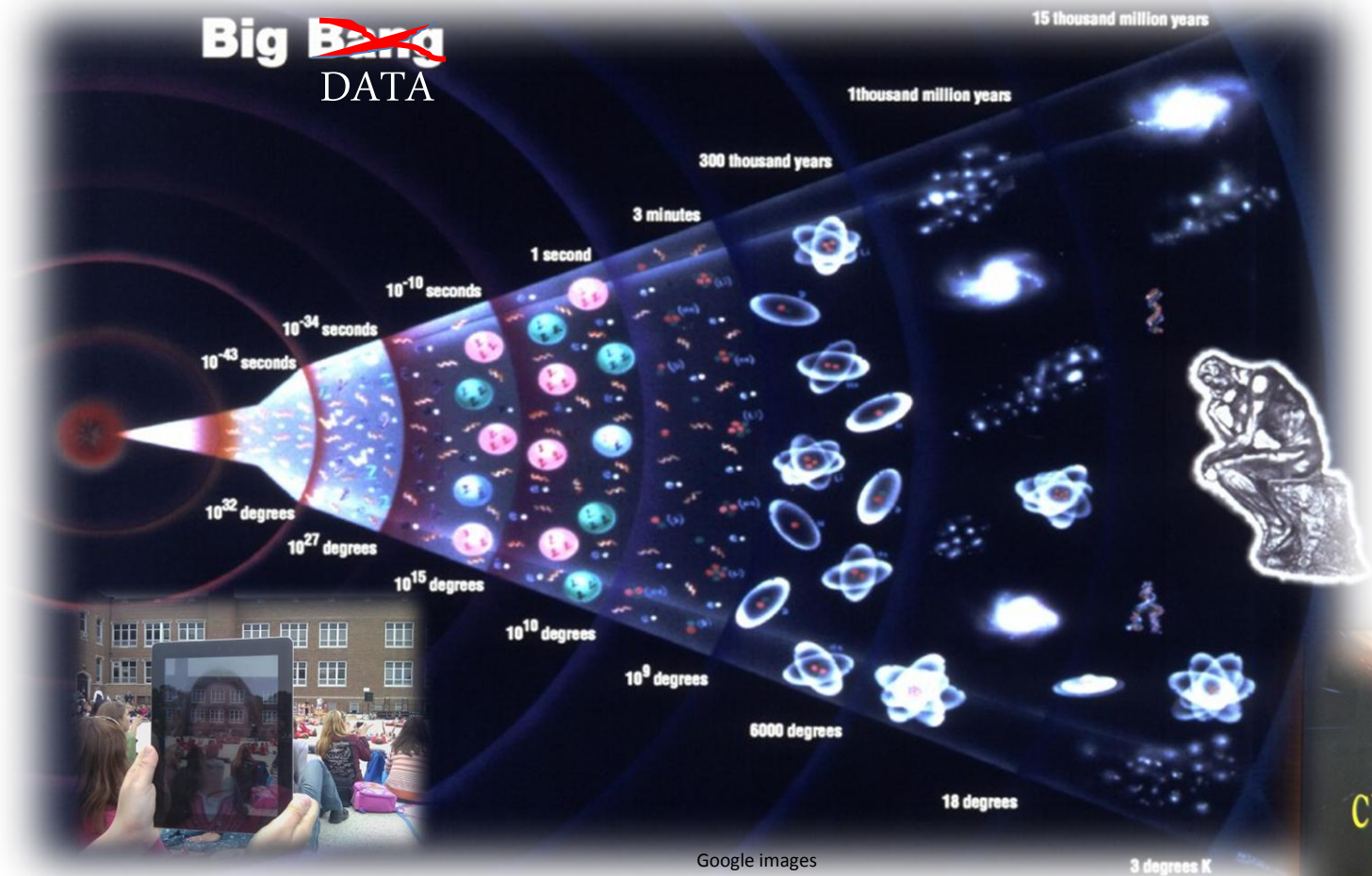
THE AVERAGE PERSON TODAY PROCESSES MORE DATA IN A SINGLE DAY THAN A PERSON IN THE 1500'S DID IN AN ENTIRE LIFETIME.

THE HUMAN FACE OF BIG DATA

CREATED BY RICK SMOLAN AND JENNIFER ERMITT

Look to the left, and you see Times Square at dusk. Look to the right, and you see the same square at dawn. In the center, you see the same square at noon. This is the same square at the same time, but from different perspectives. This is the same square at the same time, but from different perspectives. This is the same square at the same time, but from different perspectives.

"One of the most basic pieces of information in the world is, well the world"
Mayer-Schonberger & Cukier

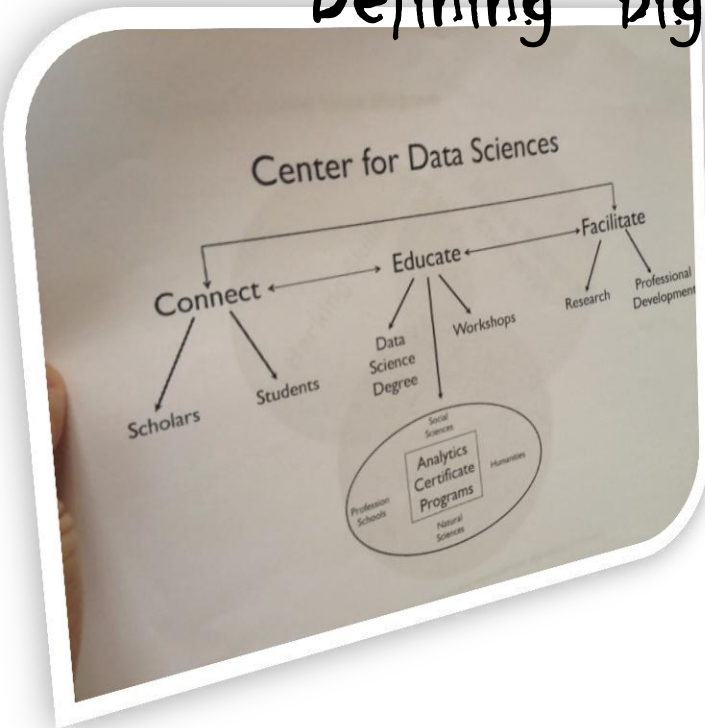


Q. How do you explain the concept of Big Data to the average person?

A. My ten year old son recently heard me speaking on the phone about this project and asked me what Big Data is. I struggled to come up with an analogy that would make sense to him and finally said, "Imagine if the whole human race had been looking through one eye for all of our existence and all of a sudden, scientists gave us the ability to open up a second eye. You're not just getting more information, more data; you're literally getting a whole new dimension. You're getting depth and perspective, 3D vision. That's what Big Data is, not simply more information but a new way to see or extract meaning from a sea of information." He asked if computers could let us open up a third and a fourth and even a thousandth eyes? And I said "yes, exactly" that's what's beginning to happen all over the world - Big Data is giving us a brand new way to see things. *Rick Smolan*

http://www.huffingtonpost.com/phil-simon/the-human-face-of-big-dat_b_3094579.html

Defining “big data...” / ‘data science’



Stats and randomness....2008 election in USA

Correlations, predictions, predilections

“From some to all” (Big Data p26)

The end of causality and of theory ?

data has done its work, when we specifically want to investigate the *why*, not just appreciate the *what*.
causality is not a primary foundation of meaning.
Causality won't be discarded, but it is being knocked off its pedestal as the primary fountain of meaning. Big data turbocharges non-causal analyses, often replacing causal investigations. The conundrum of exploding manholes in Manhattan is a case in point.

Man versus manhole

Every year a few hundred manholes in New York City start to smolder as their innards catch fire. Sometimes the cast-iron manhole covers, which weigh as much as 100 pounds, are thrown into the air.

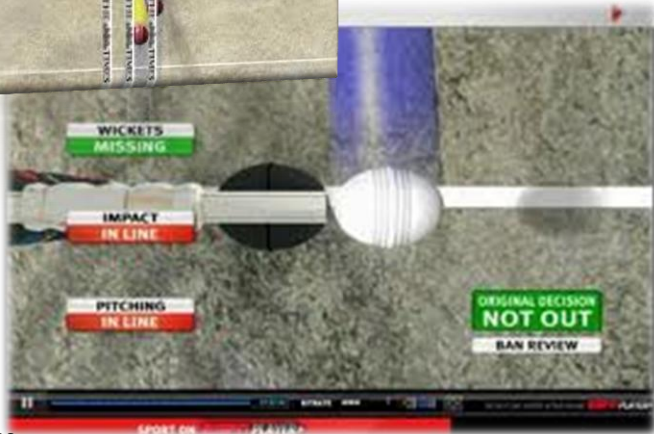
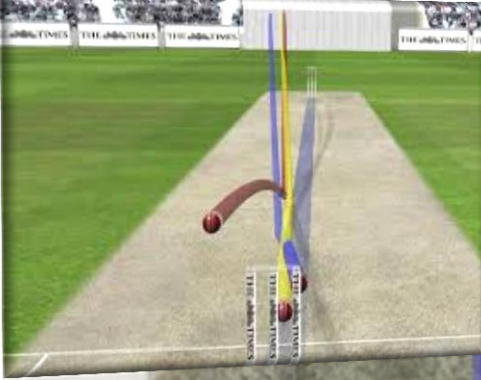
Vine yard example



Google images

(Big Data 2013)

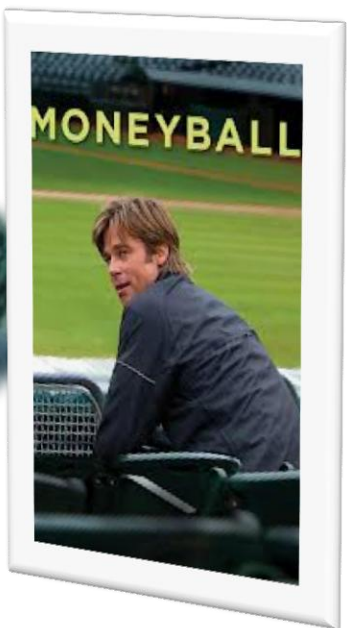
*'Support' (replace) human judgment
Fallibility...human factor*



Google images



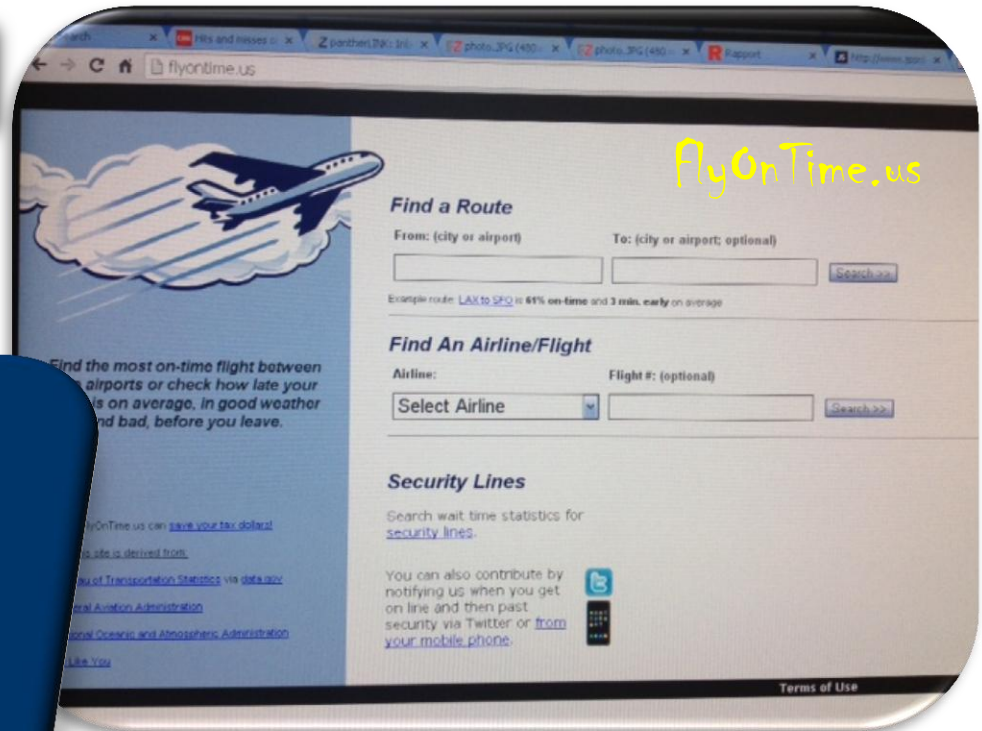
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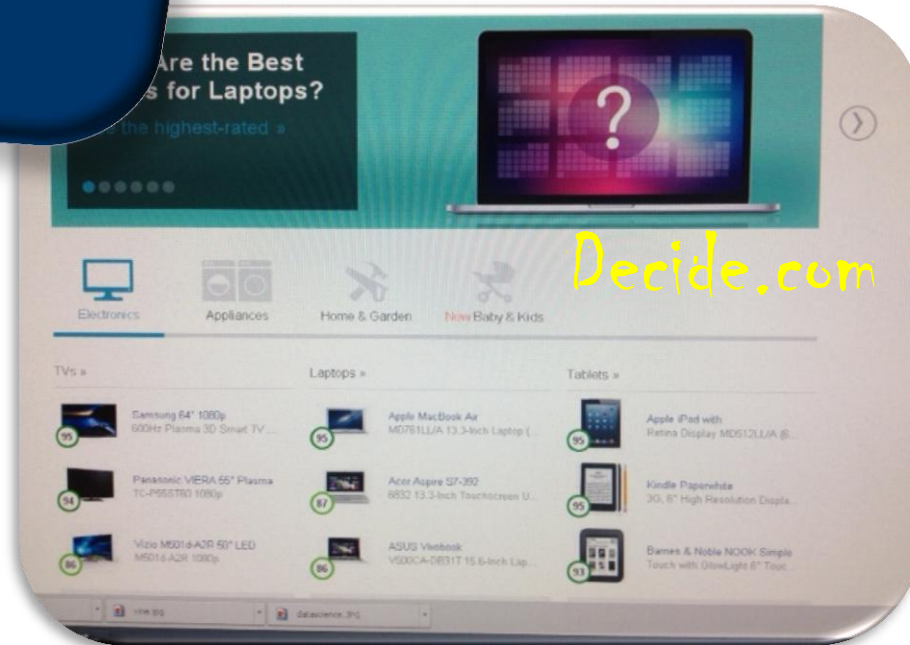
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Dr. Johannes Britz
Interim Provost
University of Wisconsin-Milwaukee
Milwaukee, WI

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Invoice Number: CINV104366
Account Number: N00018294
Purchase Order:

Student Success Collaborative

Membership Term: Sep. 30, 2013 to Sep. 29, 2016

Main Contact: Johannes Britz

Total Due (USD) \$55,000.00

Invoice 1 of 6 - Fees for Set Up - Agreement # MC19562

Terms: **Net 30**. Past due accounts are subject to a finance charge of 1 1/2 % per month.

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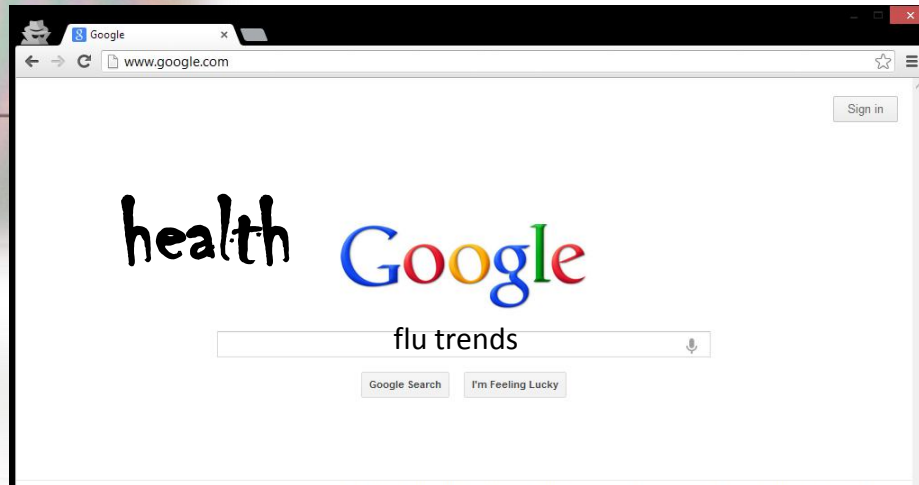
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Sir Francis Bacon

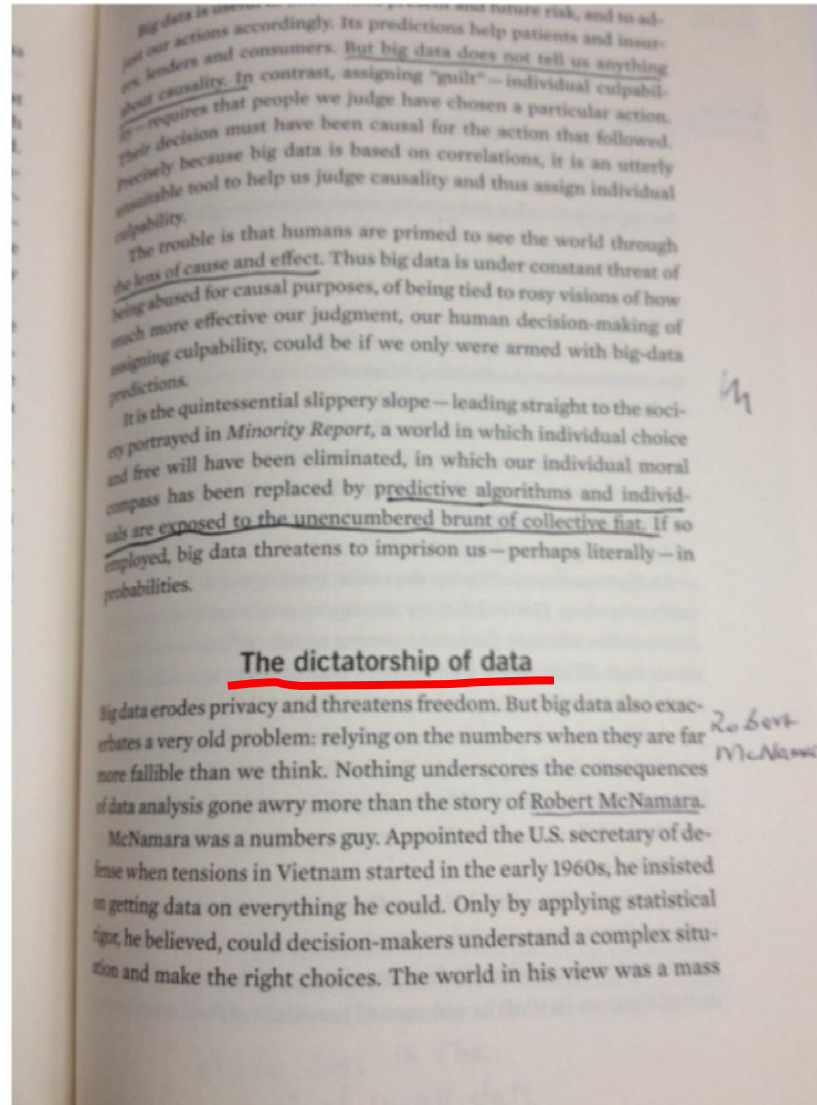
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Knowledge is power

Datafication = power

‘With the help of big data we will no longer regard our world as a string of happenings that we explain as natural or social phenomena, but as a universe comprised essentially of information’
(Big Data, p96)

Datafication = power ?



Transformation



BIG DATA



Anno Octavo.

Annæ Reginae.

An Act for the Encouragement of Learning, by Vesting the Copies of Printed Books in the Authors, or Purchasers of such Copies, during the Times therein mentioned.



Whereas Printers, Bookellers, and other persons have of late frequently taken the Liberty of printing, reprinting, or transcribing, or causing to be printed, reprinted, or transcribed, without the Consent of the Authors or Proprietors of such Books and Writings, to the great Detriment, and to the Prejudice of the Rights of them and their Heirs: For Encouraging therefore the said Persons to their Nature, and for the Encouragement of Learning, by Vesting the Copies of Printed Books in the Authors, or Purchasers of such Copies, during the Times therein mentioned, be it enacted, that it may be lawful, and be it is enacted, that the Statute in that behalf made, touching the Subject of the Copies of Printed Books, do extend, and be it is enacted, that the Statute in that behalf made, touching the Subject of the Copies of Printed Books, do extend, and be it is enacted, that the Statute in that behalf made, touching the Subject of the Copies of Printed Books, do extend.

A REVOLUTION THAT WILL TRANSFORM HOW WE LIVE, WORK, AND THINK

VIKTOR MAYER-SCHÖNBERGER
KENNETH CUKIER

Before big data, this fundamental freedom was obvious. So much so, in fact, that it hardly needed to be articulated. After all, this is the way our legal system works: we hold people responsible for their acts by assessing what they have done. In contrast, with big data we can predict human actions increasingly accurately. This tempts us to judge people not on what they did, but on what we predicted they would do.

In the big-data era we will have to expand our understanding of justice, and require that it include safeguards for human agency as much as we currently protect procedural fairness. Without such safeguards the very idea of justice may be utterly undermined.

By guaranteeing human agency, we ensure that government judgments of our behavior are based on real actions, not simply on big data analysis. Thus government must only hold us responsible for our past actions, not for statistical predictions of future ones. And when the state judges previous actions, it should be prevented from relying solely on big data. For example, consider the case of nine companies suspected of price fixing. It is entirely acceptable to use big-data analyses to identify possible collusion so that regulators can investigate.

threat of a dictatorship of data, in which we endow the data with more meaning and importance than it deserves.

It is equally crucial that we protect individual responsibility. Society will face a great temptation to stop holding individuals accountable and instead may shift to managing risks, that is, to basing decisions about people on assessments of possibilities and likelihoods of potential outcomes. With so much seemingly objective data available, it may seem appealing to de-emotionalize and de-individualize decision-making, to rely on algorithms rather than on subjective assessments by judges and evaluators, and to frame decisions not in the language of personal responsibility but in terms of more "objective" risks and their avoidance.

For example, big data presents a strong invitation to predict which people are likely to commit crimes and subject them to special treatment, scrutinizing them over and over in the name of risk reduction. People categorized in this way may feel, quite rightly, that they're being punished without ever being confronted and held

Pre destination

Pre DATA stination

Human Free Will

||



Juridical system:
From probable cause to
Probabilistic cause (p17)

pened. And the punishment isn't much better if the visits are seen not as a punishment but simply as an attempt to reduce the likelihood of future problems — as a way to minimize risk (in this case, the risk of a crime that would undermine public safety). The more we switch from holding people accountable for their acts to relying on data-driven interventions to reduce risk in society, the more we devalue the ideal of individual responsibility. The predictive state is the nanny state, and then some. Denying people's responsibility for their actions destroys their fundamental freedom to choose their behavior.

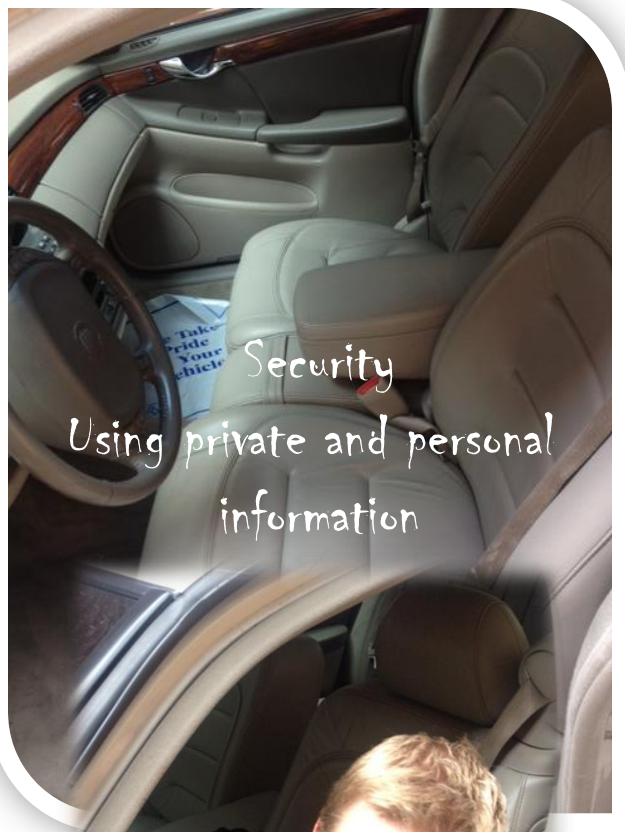
If the state bases many decisions on predictions and a desire to

The trouble is that we are inclined to see the world through the lens of cause and effect. Thus big data is under constant threat of being abused for causal purposes, of being tied to rosy visions of how much more effective our judgment, our human decision-making of assigning culpability, could be if we only were armed with big-data predictions.

It is the quintessential slippery slope — leading straight to the society portrayed in *Minority Report*, a world in which individual choice and free will have been eliminated, in which our individual moral compass has been replaced by predictive algorithms and individuals are exposed to the unencumbered brunt of collective fiat. If so employed, big data threatens to imprison us — perhaps literally — in probabilities.

p 183 Big Data





Security
Using private and personal
information



Safety:
Using private and personal
information



End of privacy?
Need A Different
articulation of the
SAME VALUE, OR
A TOTAL NEW VALUE
Expressed AS A NEW
HUMAN right?

"Collect EVERYTHING
AND
Keep it FOREVER "

"Intelligent Archive"



Phil Shelley
2013.

State of being (free,
educated, healthy...)

Ability to do and choose
(to communicate, where to live,
who to marry, private...)

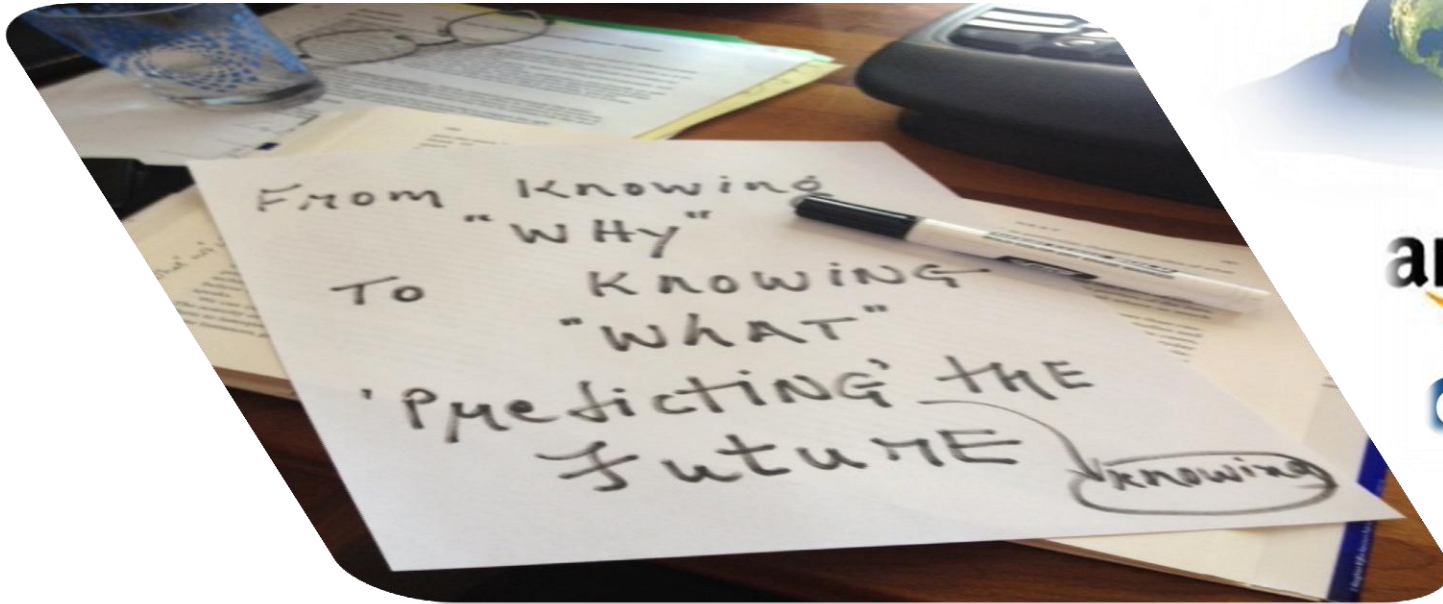
Legal arrangements are not
necessarily needed

Baseline protection instead of a
moral ideal

Which interests are 'urgent
interests'? Problem of
proliferation of rights.
'Overlapping consensus'
Rawls

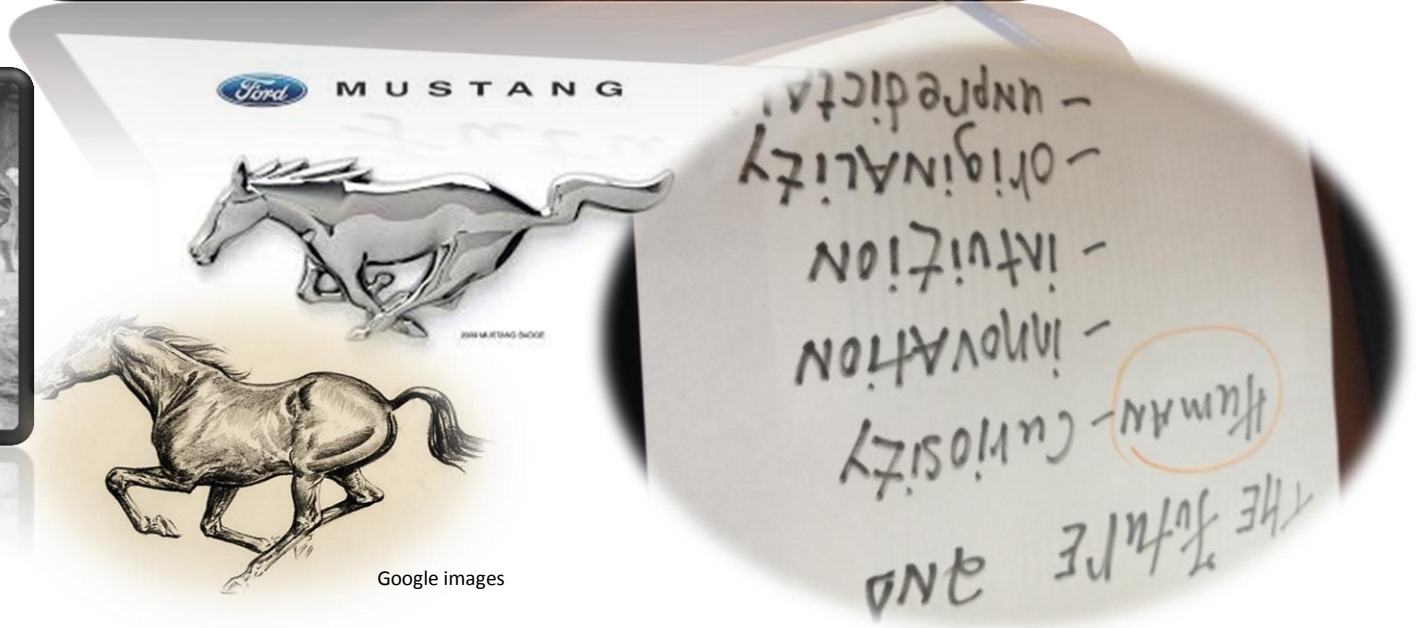
Big data

Human rights can evolve over time....based on evolving concerns and threats
...are adaptable to new circumstances and digital technologies

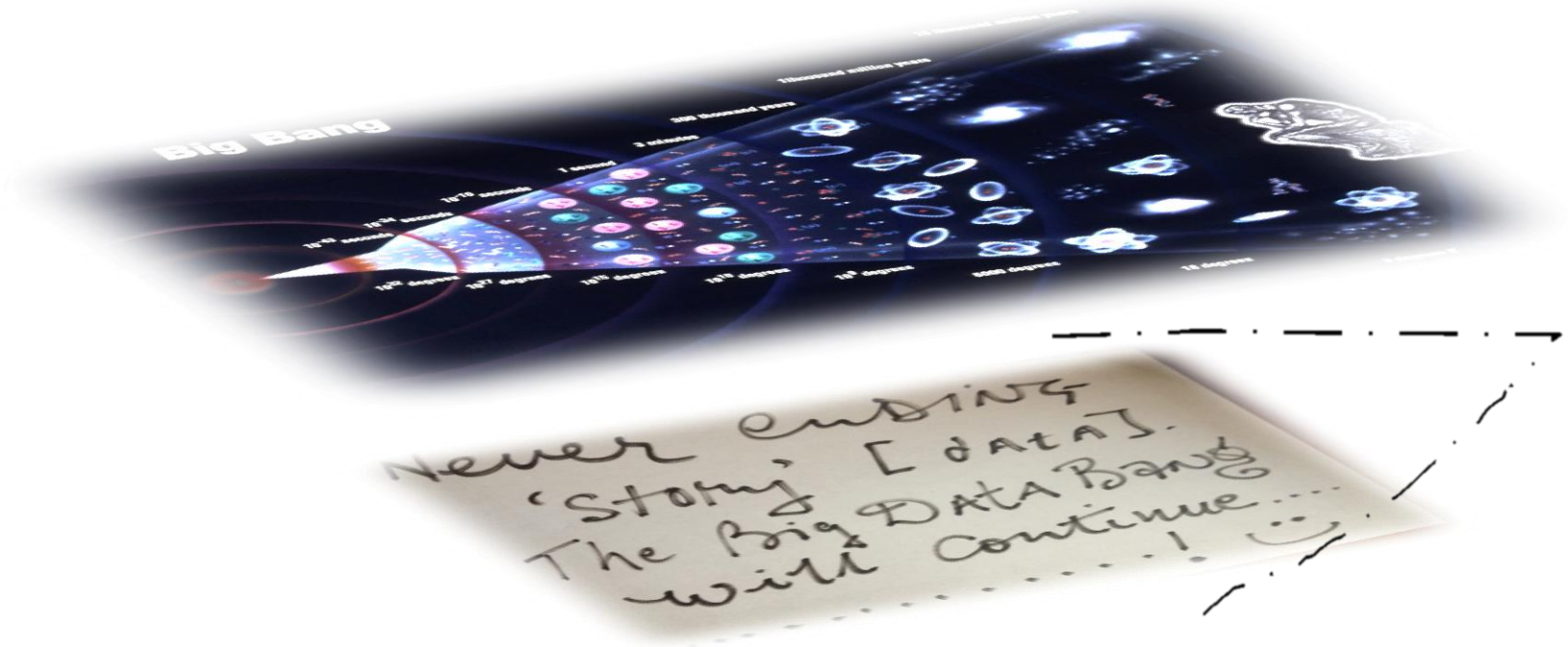


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We might need to rethink the world and
...information ethics