

A 3D grid of transparent cubes is shown on a dark background. The cubes are arranged in a perspective view, receding into the distance. The text is overlaid on the top left of the image.

The one way mirror of time:

Biometrics, spoofing and the transparency of the future

Dr Anders Sandberg
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Oxford Martin School
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The Future

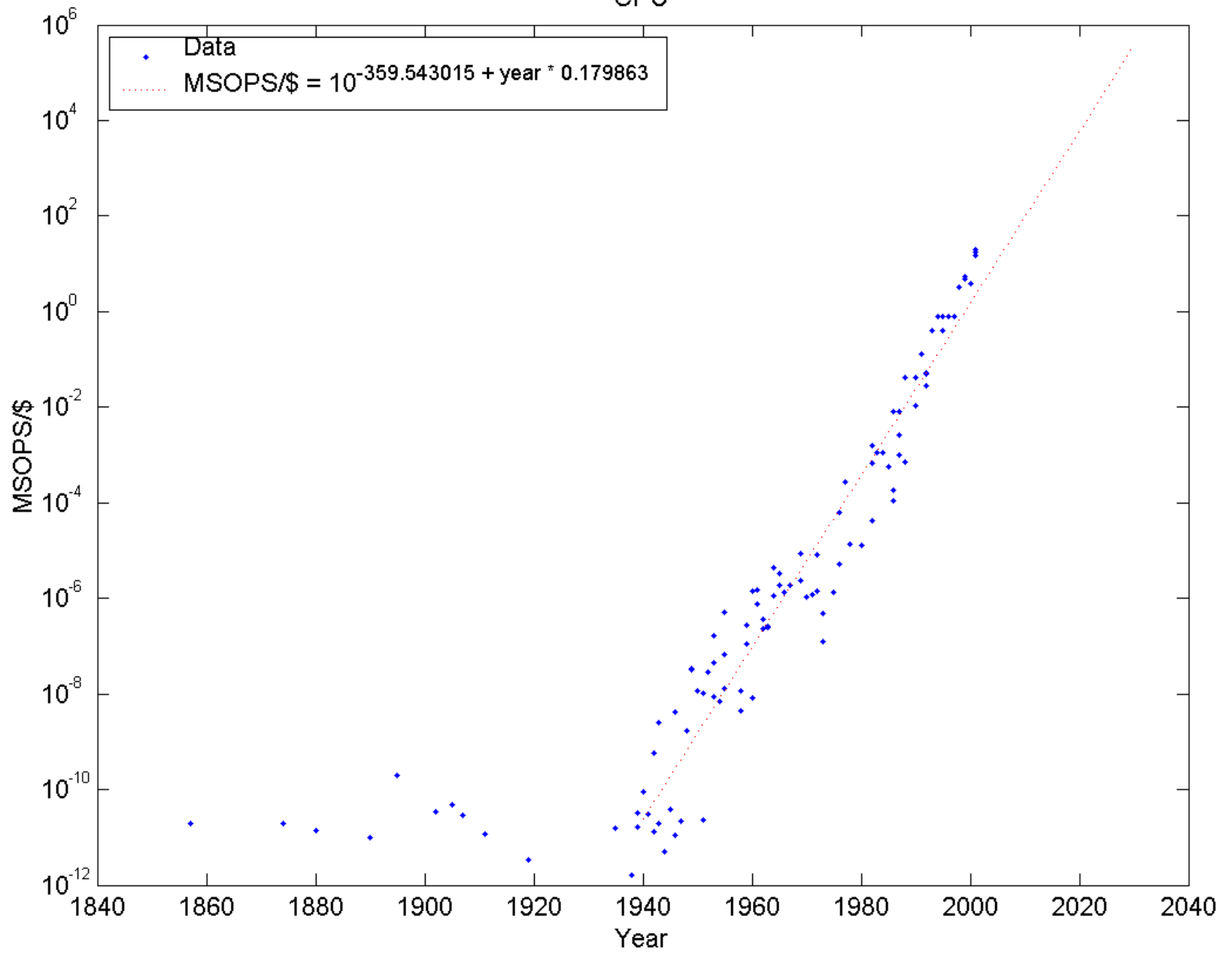
- In the future there will be more applications of biometrics.
- We will have far better hardware and software, and more people will have access to them.
- Future versions of current people will exist for some time.
- We will fail to predict big applications and controversies.

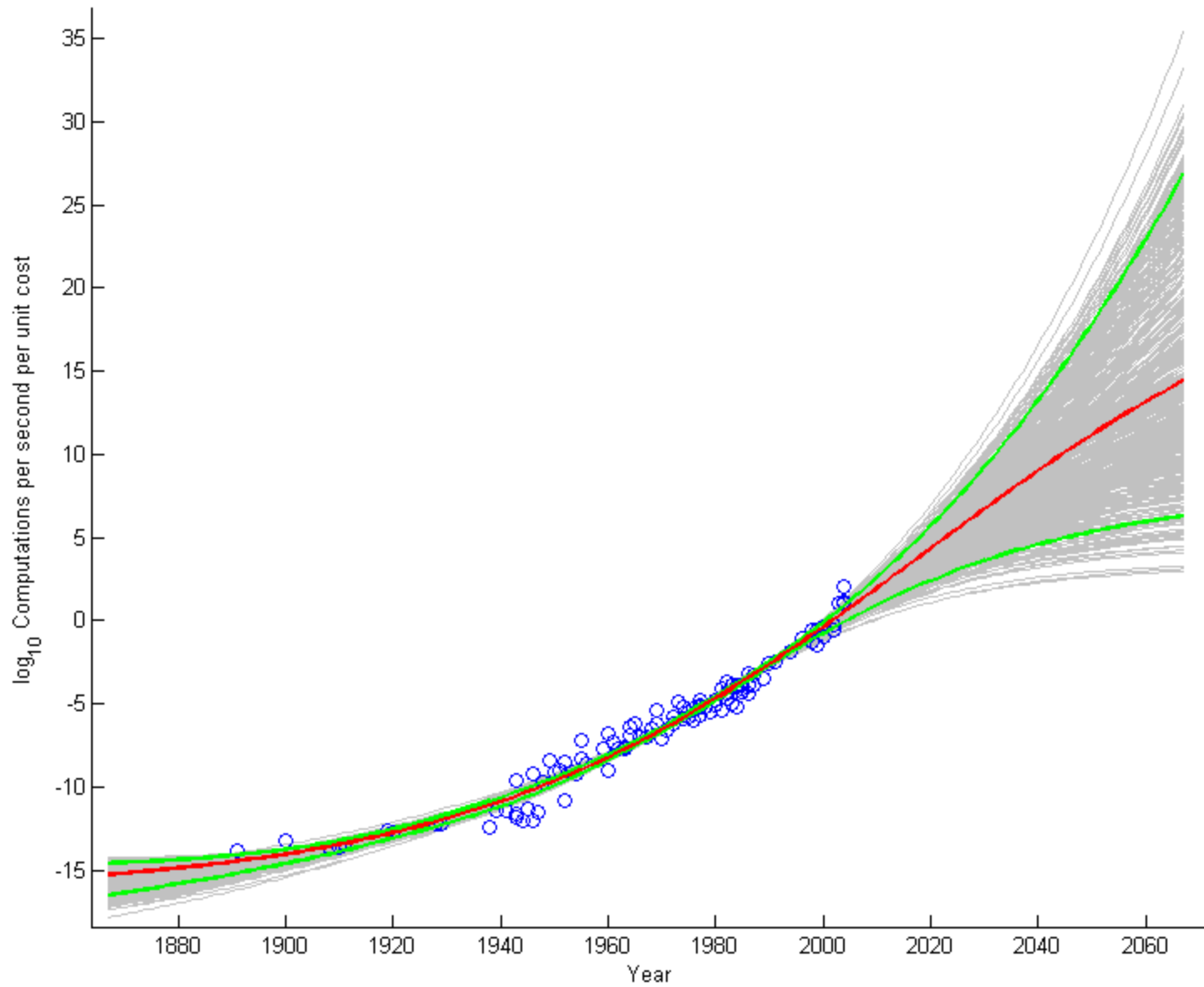


The transparency revolution

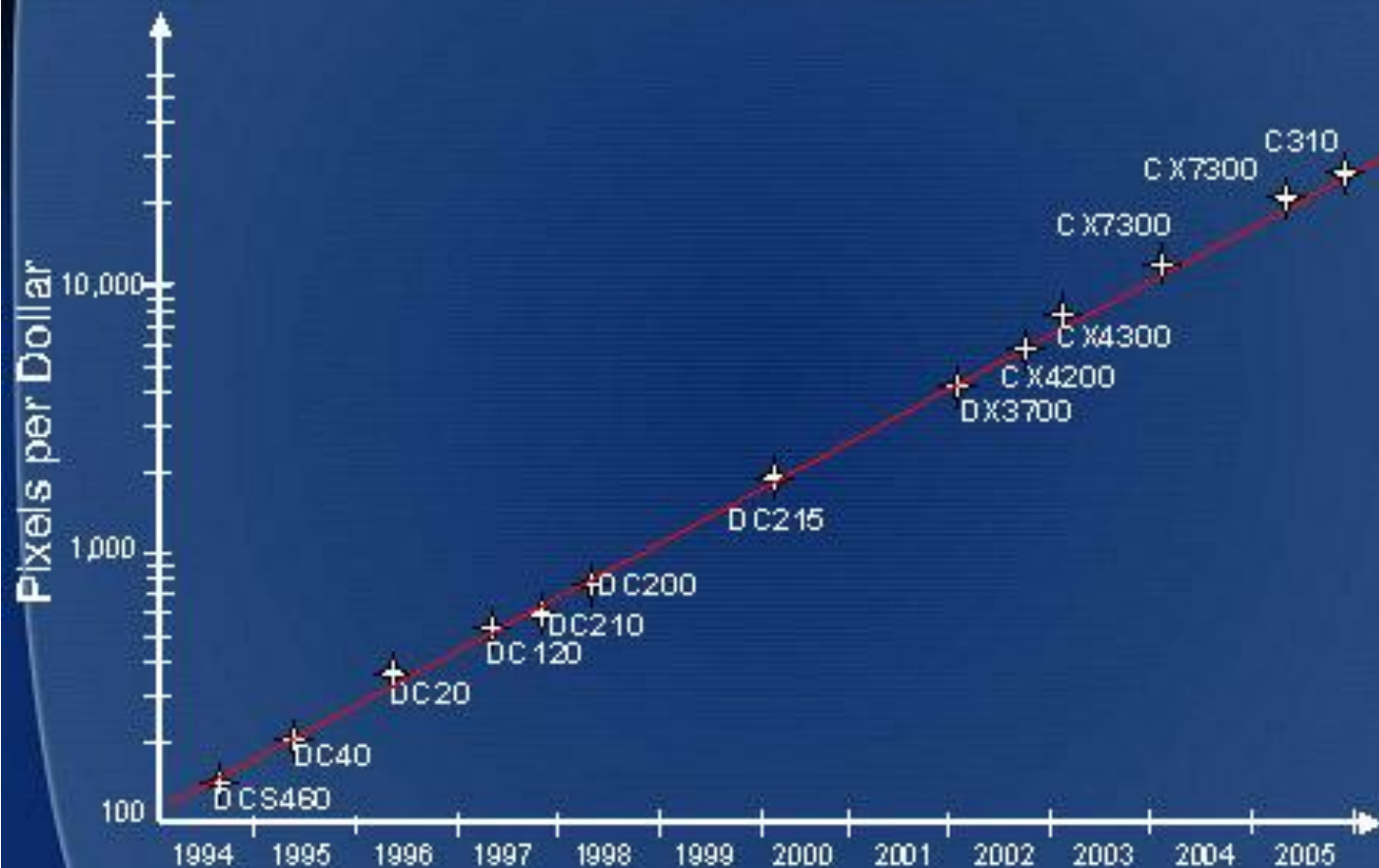


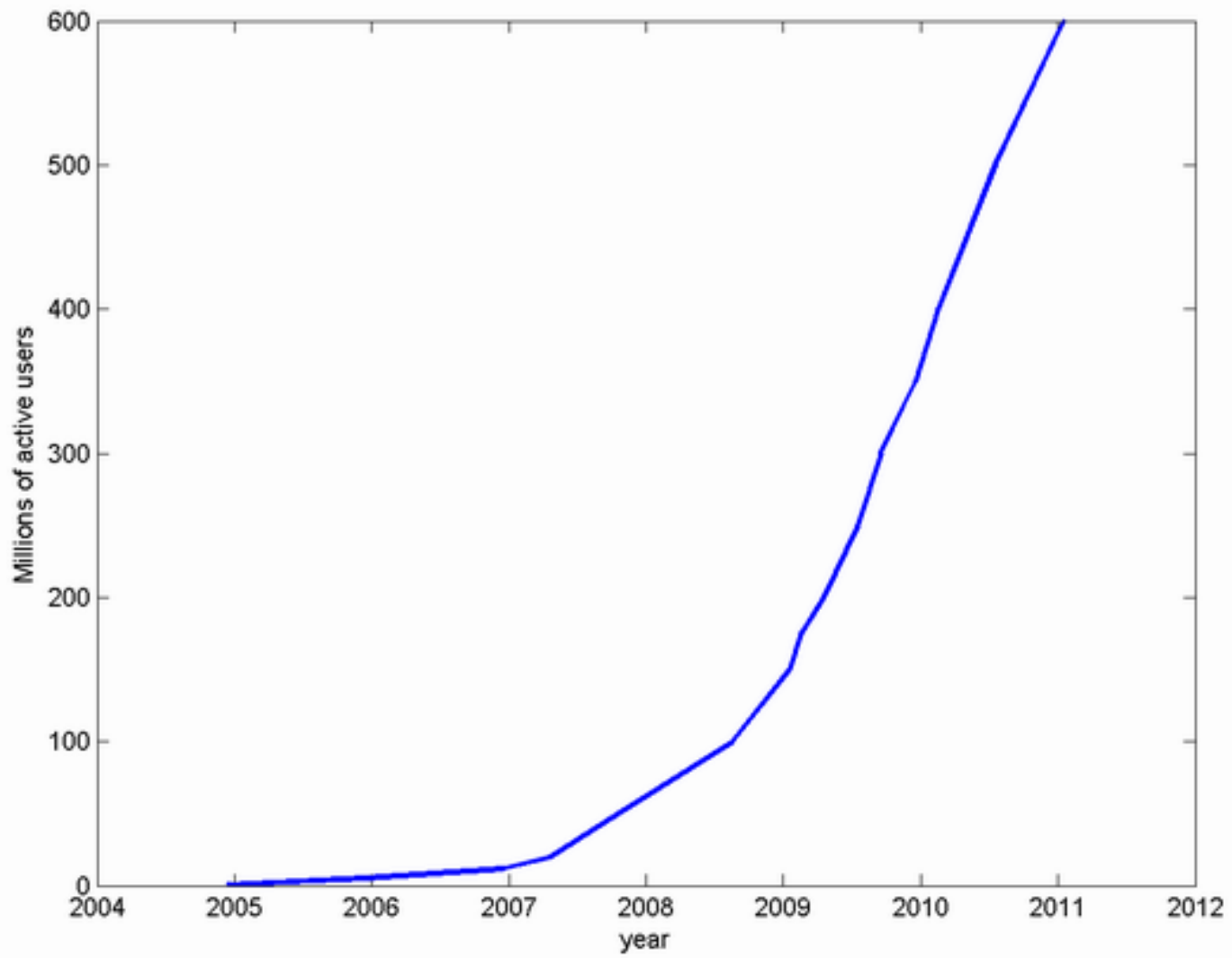
CPU





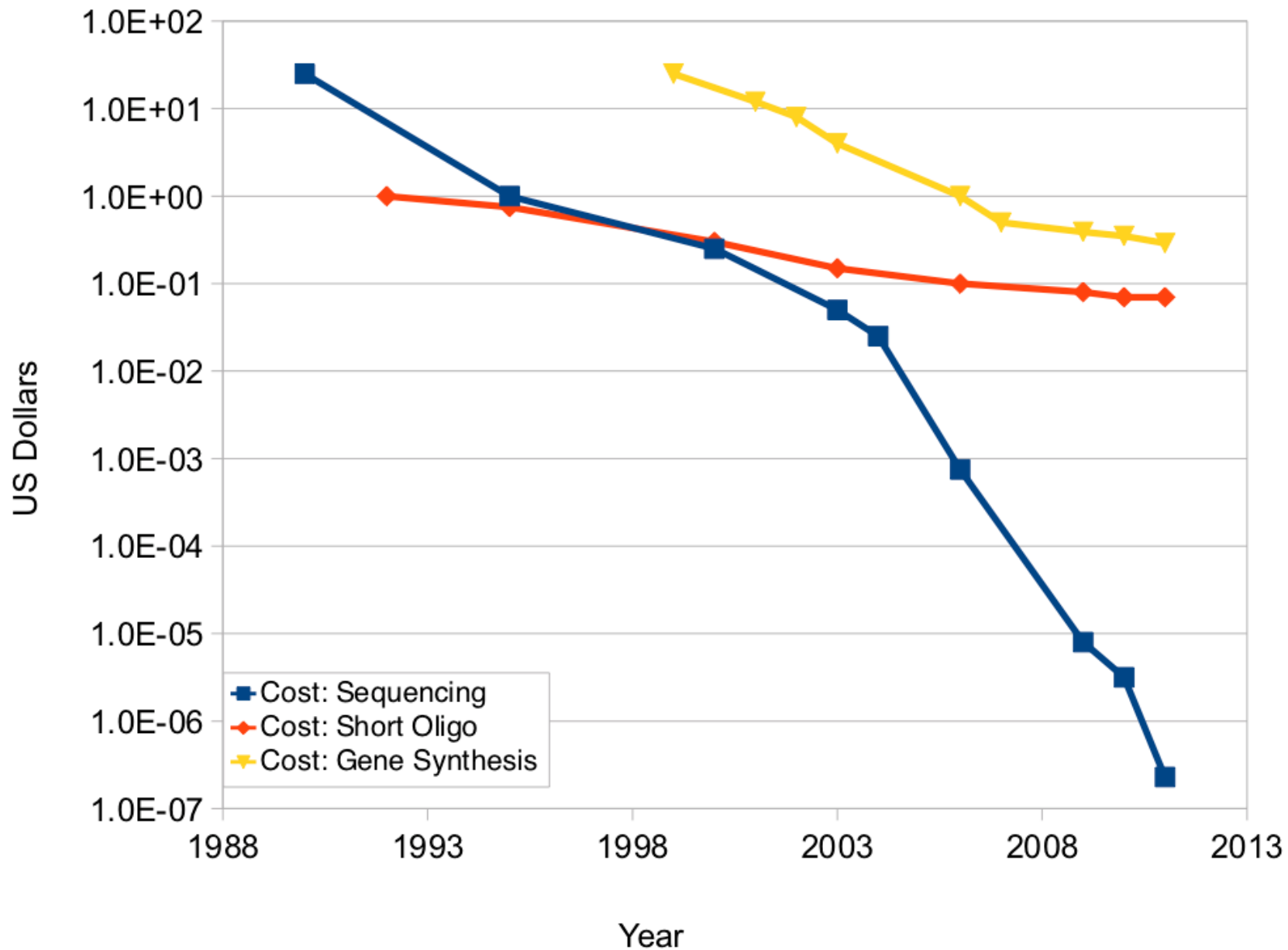
The Pixels per Dollar Projection



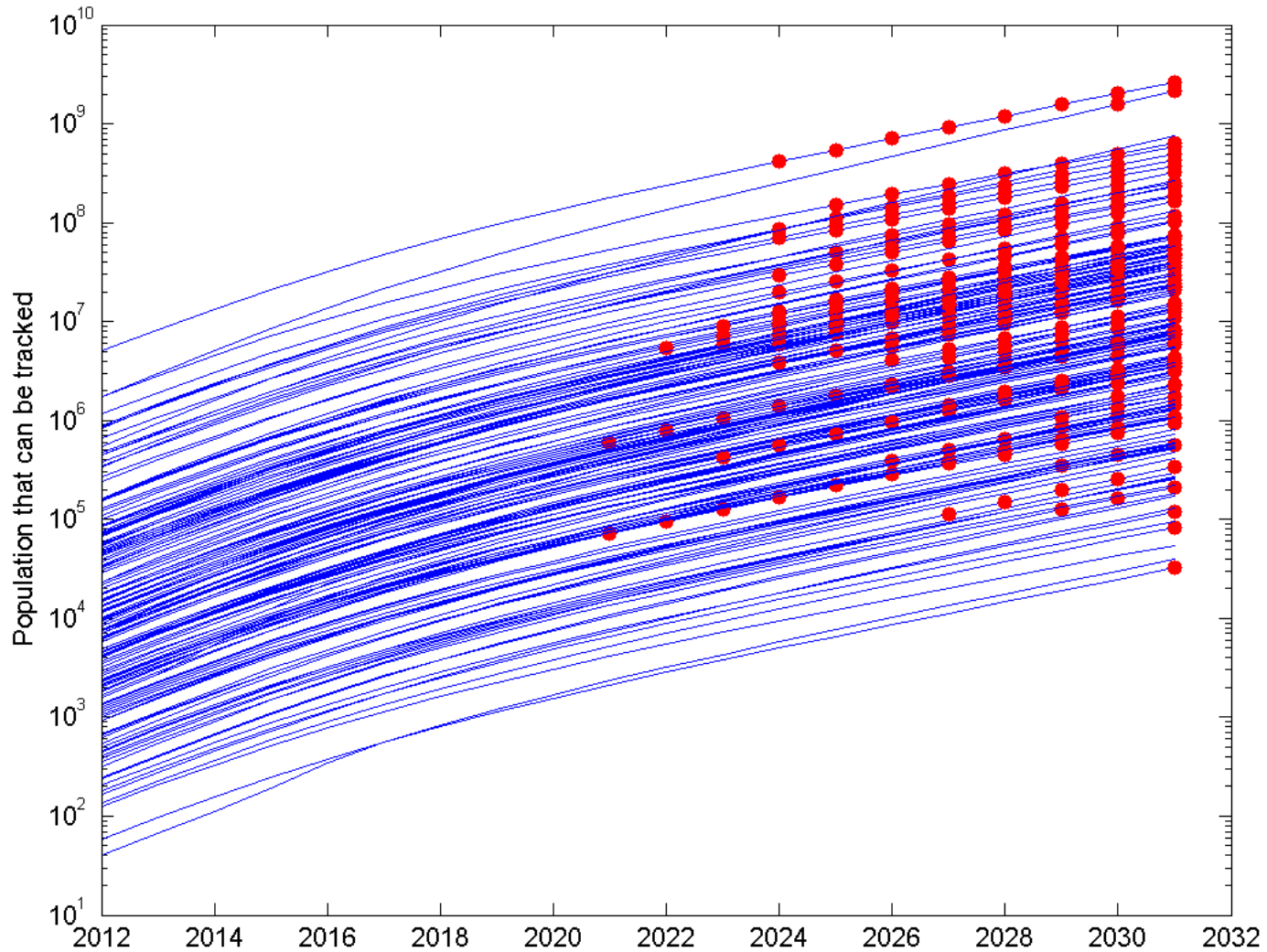


Cost Per Base of DNA Sequencing and Synthesis

Rob Carlson, June 2011, www.synthesis.cc



Total surveillance for 0.01% GDP



IN THE
FUTURE,
WE WILL
KNOW
EVERYTHING
ABOUT
EVERYONE
AND
NOTHING
ABOUT
ANYTHING
ELSE. —Sean Thomason

Time and biometrics

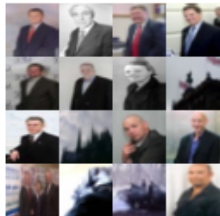
- Technological change
 - Hardware, software, data obsolescence
 - New possibilities
- Personal change
 - Bodily change
 - Personality change
- Societal change
 - Change in technology
 - Change in regulation
 - Change in culture







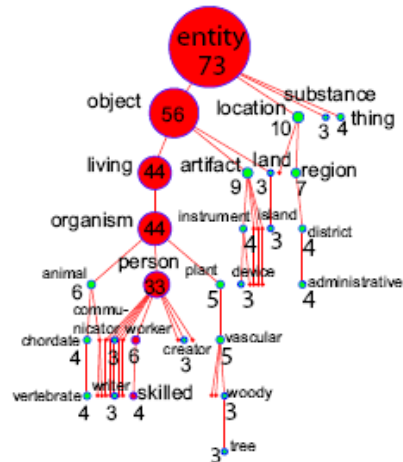
a) Input image



b) Neighbors

- entity
- object
- living
- organism
- person
- scientist
- chemist

c) Ground truth

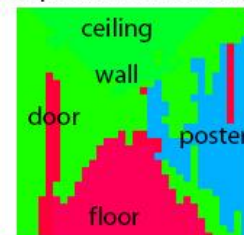


d) Wordnet voted branches

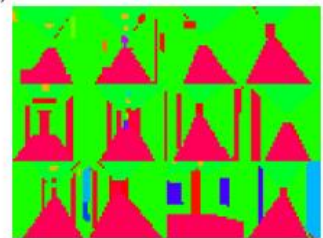
Input image



RBM predicted labels (63%)



Ground truth neighbors

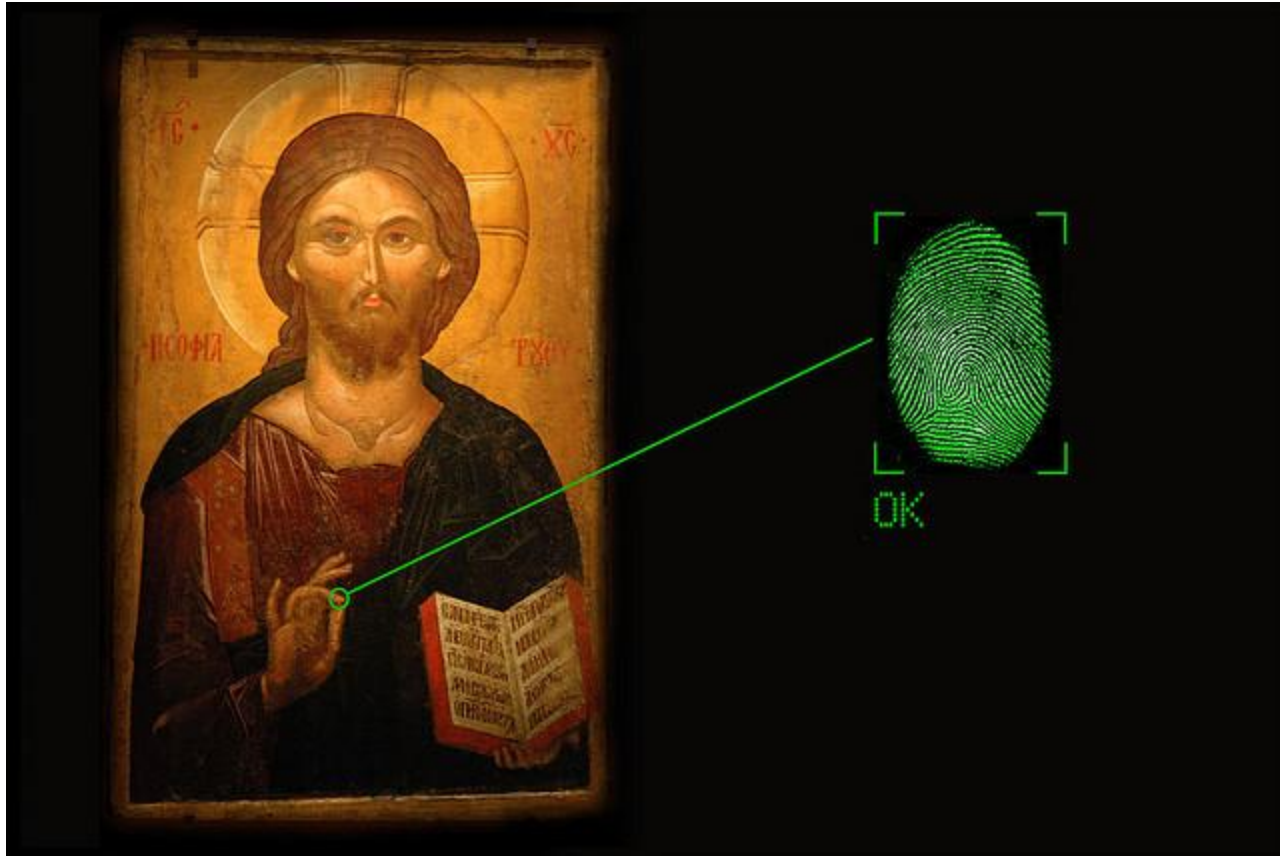




**For reasons
of hygiene this
toilet is monitored
by video**

www.foetbld.org

B&G BROTHER
KAMARUS.de



Reciprocity

Reciprocity (as per Mordini & Rebera 2012)

- Symmetry

(if A identifies B, A should be identified to B)

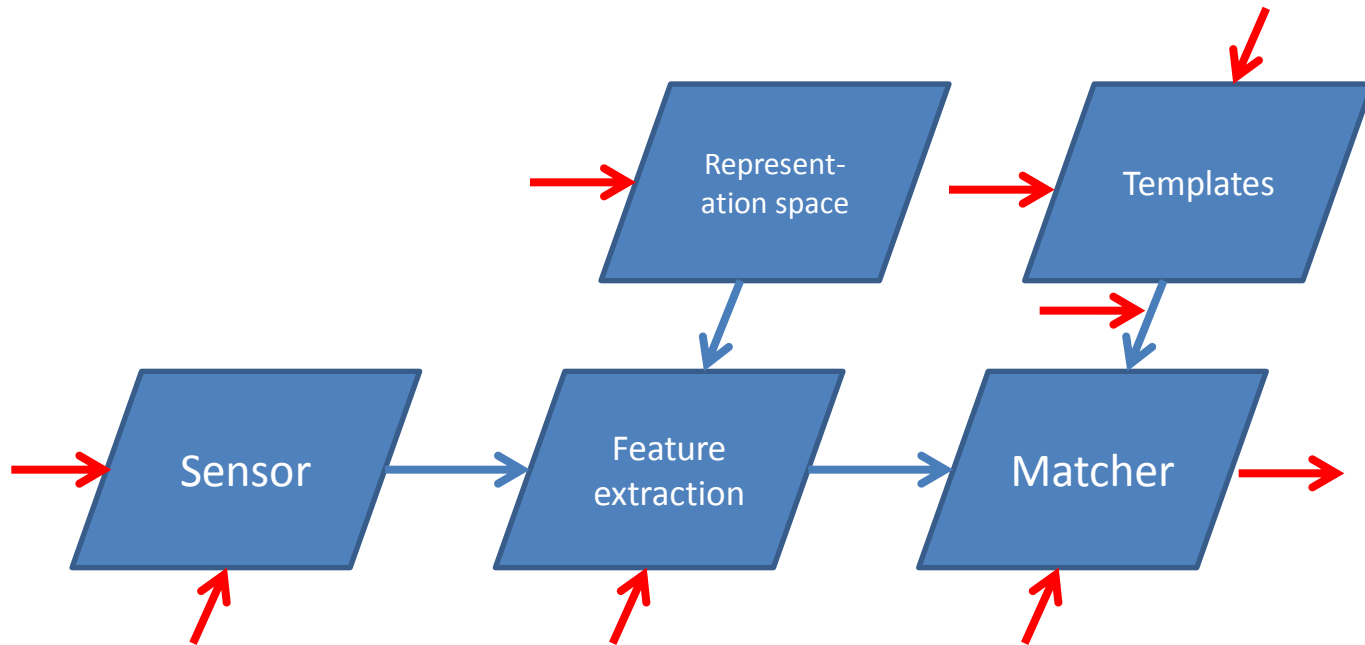
- Bestowal and acknowledgment of rights

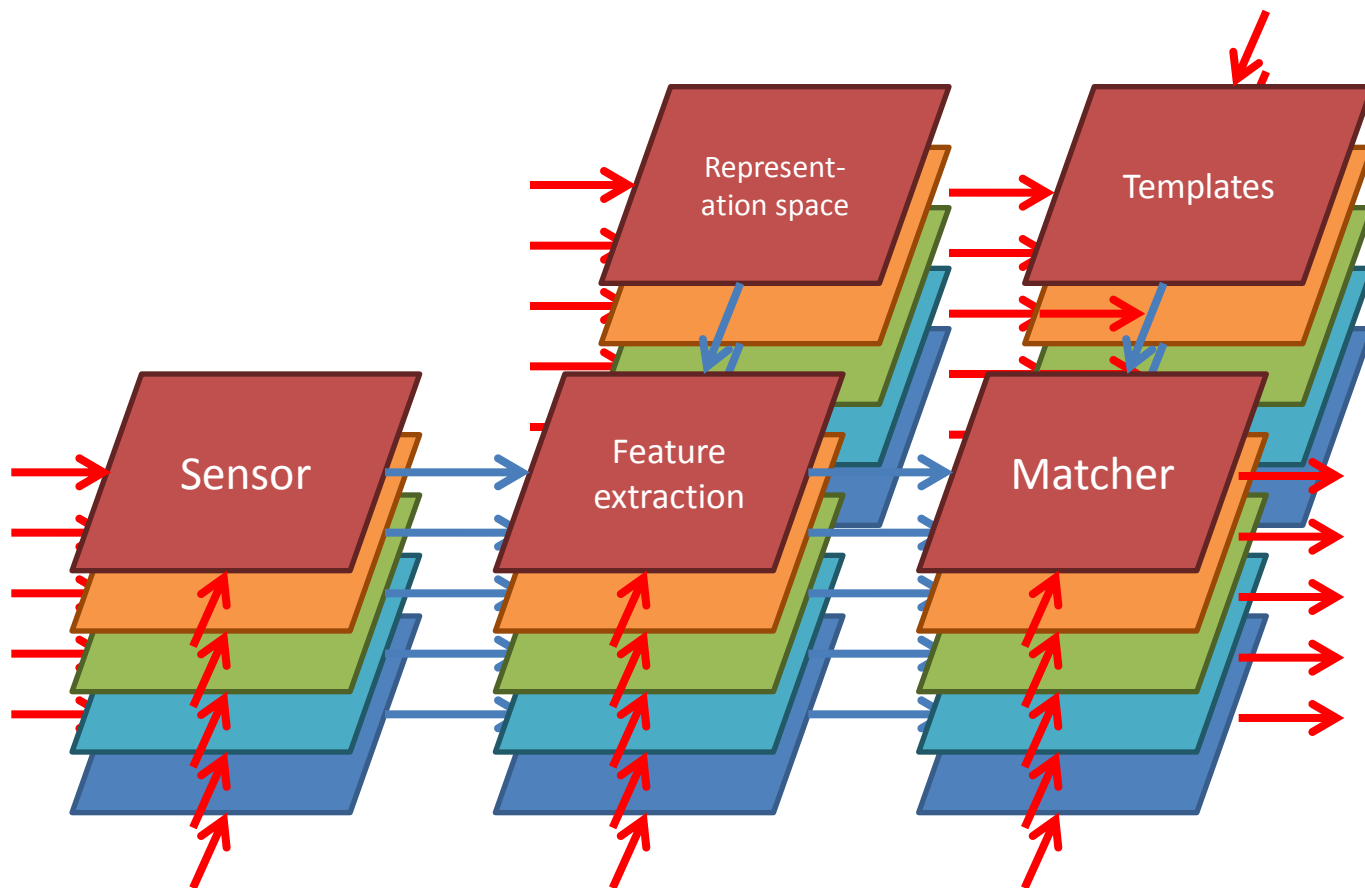
(In identifying B, A must bestow rights upon B)

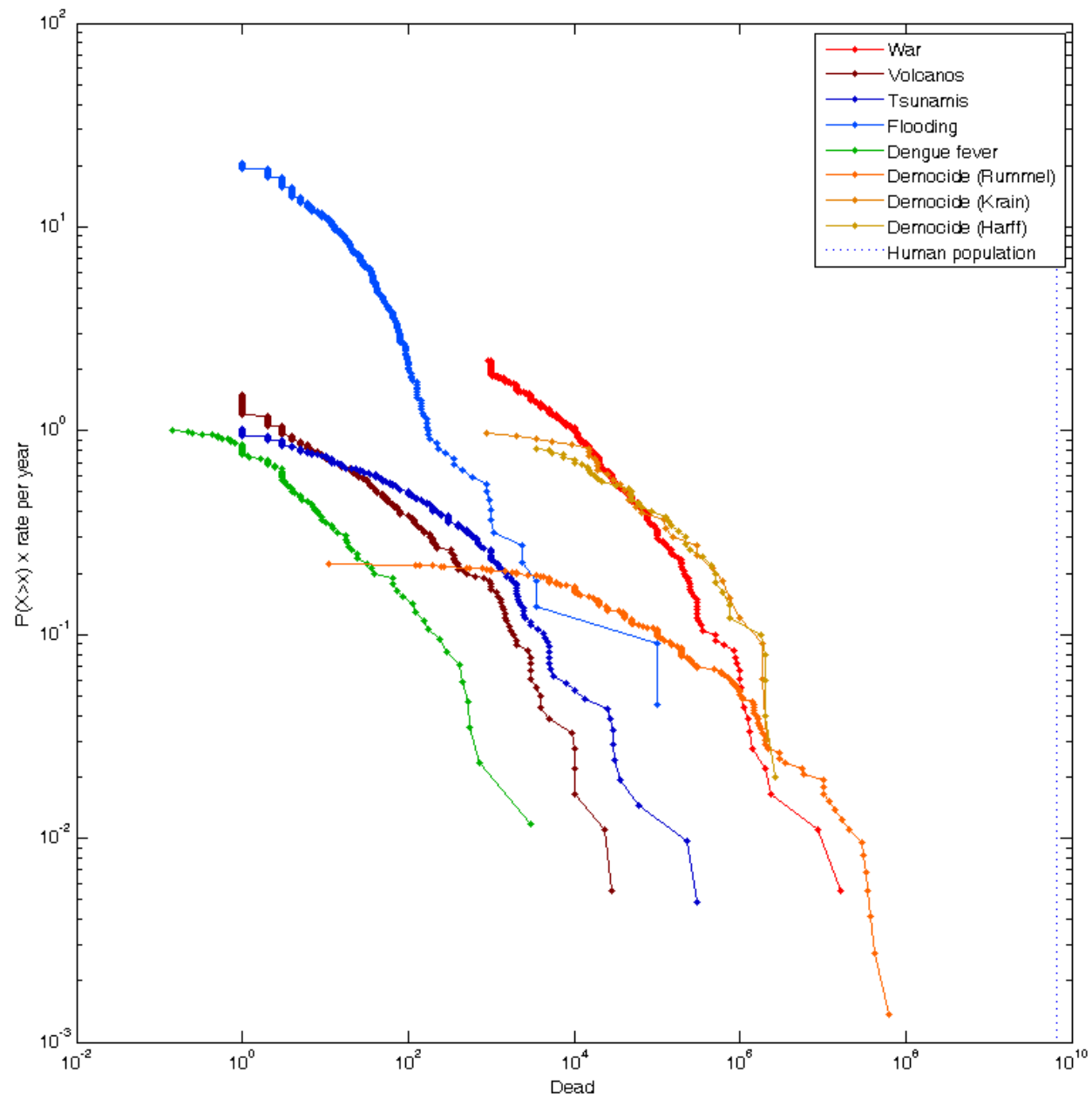
- Transparency

(It should be clear to B that they are being identified by A)











Eric Fischer: See Something or Say Something
Blue dots: tweets, red dots: Flickr pictures

What to do?



Solutions?

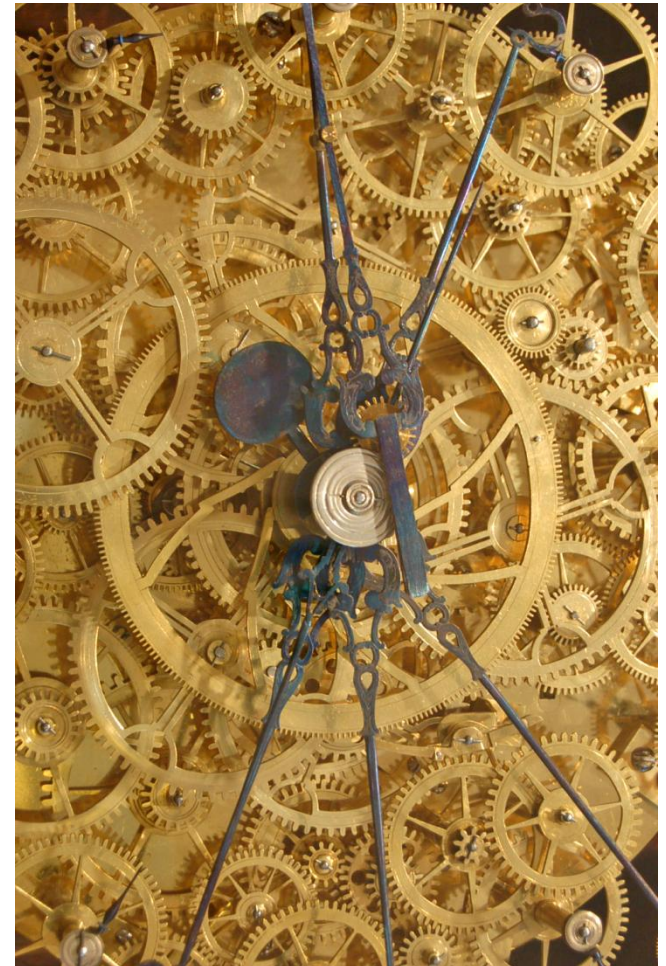
- Get more information
- Detect and prevent risks
- Avoid creating more risk
- Increase resilience





Resilient systems

- Local attractors
- Reward has to be built in and directly based on the desired outcome
- Punishing bad behavior is not enough
- Adaptive on right timescale(s)
- Participants need to understand the purpose of the system clearly
- Open
- Time scalability



Risk management

- Maximize expected utility
- Minimize risk of disaster
- Maximize chance of OK outcome



Mrs. Vandyke
family is all
well.
Hamp is
going to see
the girls

Centre Point Tenn

Dec. 6. 1896

Mrs. Fizzie Brown.

Adell. Tenn

We received your letter
a few days ago we was glad
to here from you. This
leaves all well. and hope
this letter will find you
all the same. We went to
Grandpas to day Grandpa
was well but Grandma
had about weak spell
to day while we were at
dinner. Ma says she dont
think she will live long
she is loosing her mind
she will be 77 years 26 of
February.

HOW WE REMEMBER OUR ANCESTORS:

I FOUND THIS OLD PICTURE
OF MY GREAT GRANDFATHER.
HE LOOKS SO COOL AND
MYSTERIOUS!



SHOEBOXBLOG.COM

HOW FUTURE GENERATIONS WILL REMEMBER US:

I JUST DOWNLOADED AN
ARCHIVE OF MY GREAT
GRANDFATHER'S FACEBOOK
UPDATES.
EVIDENTLY HE HATED MONDAYS
AND LOVED TELLING PEOPLE
WHEN HE WAS BORED.



-brian

CHUCK & BEANS

FACEBOOK.COM/SHOEBOXBLOG

Letter from Charles Darwin, 12 years old

Dear Friend, January 4, 1822

My Dear friend,

You must know that after my Geography, she said I should go down to ask for Richards poney, just as I was going, she said she must ask me not a very decent question, that was whether I wash all over every morning no then she said it was quite disgustin then she asked me if I did every other morning, and I said no then she said how often I did, and I said once a week, then she said of cour you wash your feet every day, and I said no, then she begun saying how very disgusting and went on that way a good while, then she said I ought to do it, I said I would wash my neck and shoulders, then she said you had better do it all over then I said upon my word I would not, then she told me, and made me promise I would not tell, then I said, why I only wash my fett once a month at school, which I confess is nasty, but I cannot help it, for we have nothing to do it with, so then Caroline pretended to be quite sick, and left the room, so then I went and told erasmus, and he bust out in laughing and said I had better tell he to come and wash them her self, besides that she said she did not like sitting by me or Erasmus for we smelt of not washing all over, there we sat arguing away for a good while.

I remain your affectionately

Justice w a nose as big as your fist

January the 2, 1822

Charles Darwin