Big Data or Small Data:

What's the key to unlocking learning opportunities?

Unite for Education and Leadership Conference
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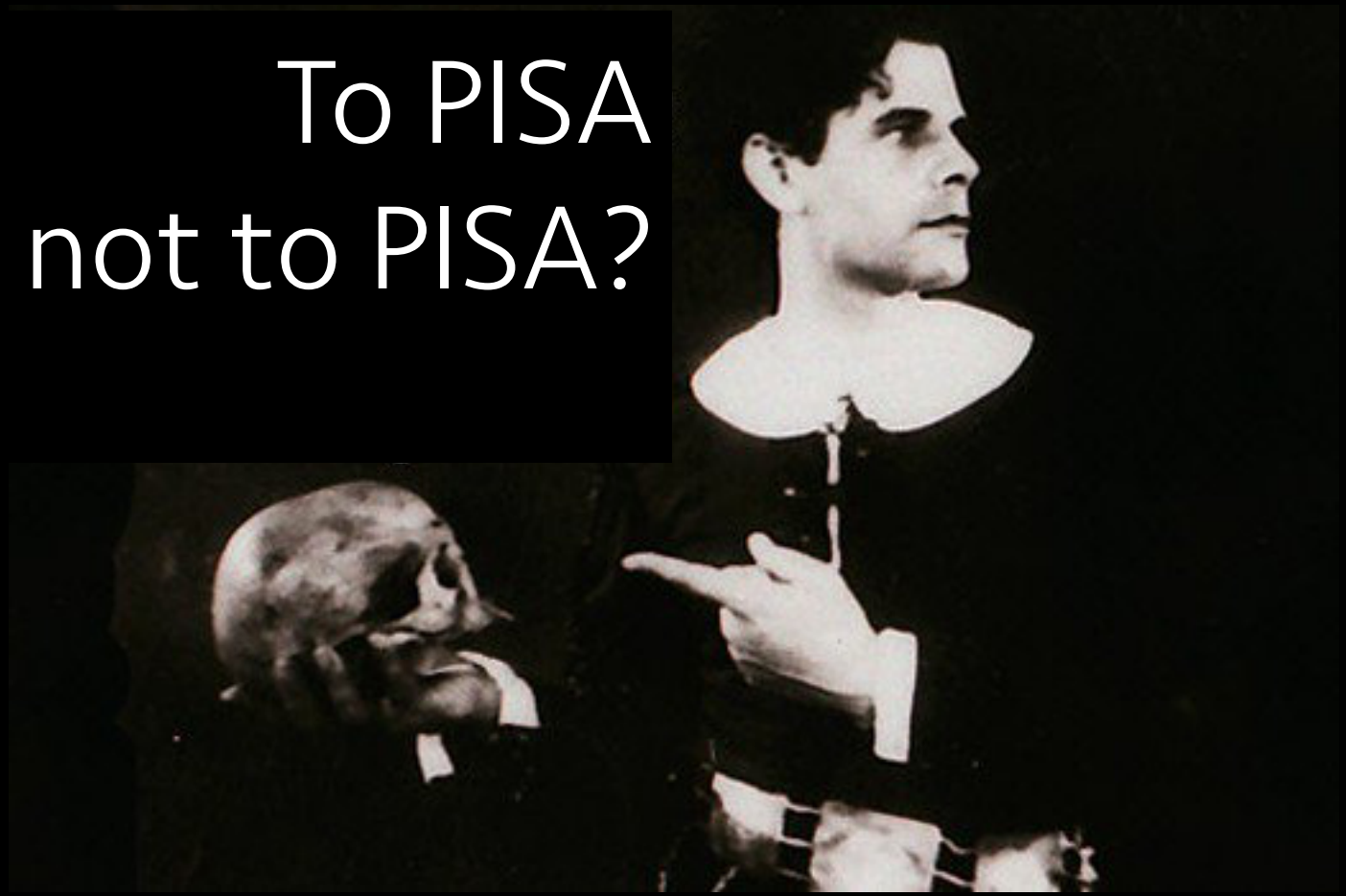
pasi_sahlberg

To PISA or not to PISA?



Big Data

“Extremely large data sets that may be analyzed computationally to reveal patterns, trends, and associations, especially relating to human behavior and interactions.”

Data mining

“The process of sorting through large **data** sets to identify patterns and establish relationships to solve problems through **data** analysis.”

Learning analytics

“The measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimizing **learning** and the environments in which it occurs.”

Can Big Data make education smarter?

OECD
BETTER POLICIES FOR BETTER LIVES

Education GPS

THE WORLD OF EDUCATION AT YOUR FINGERTIPS

Education GPS is *the* OECD source for internationally comparable data and analysis on education policies and practices, opportunities and outcomes. Accessible any time, in real time, the Education GPS provides you with the latest information on how countries are working to develop high-quality and equitable education systems.

Analyse by country

Choose from a wide variety of themes and data to create your own, customised country reports.

Explore data

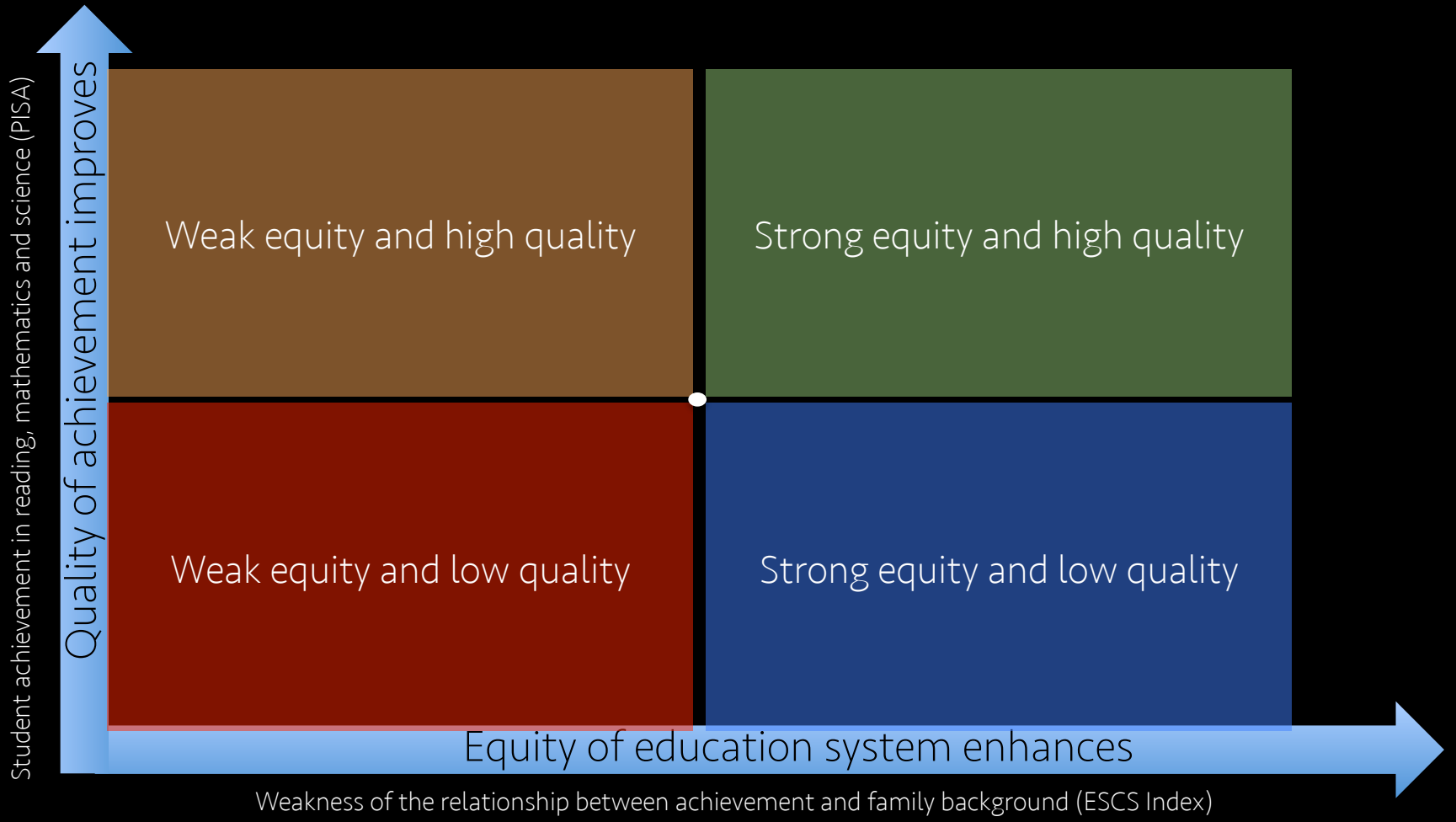
... By topic and by publication. Compare countries' by their success in providing a high-quality education for all.

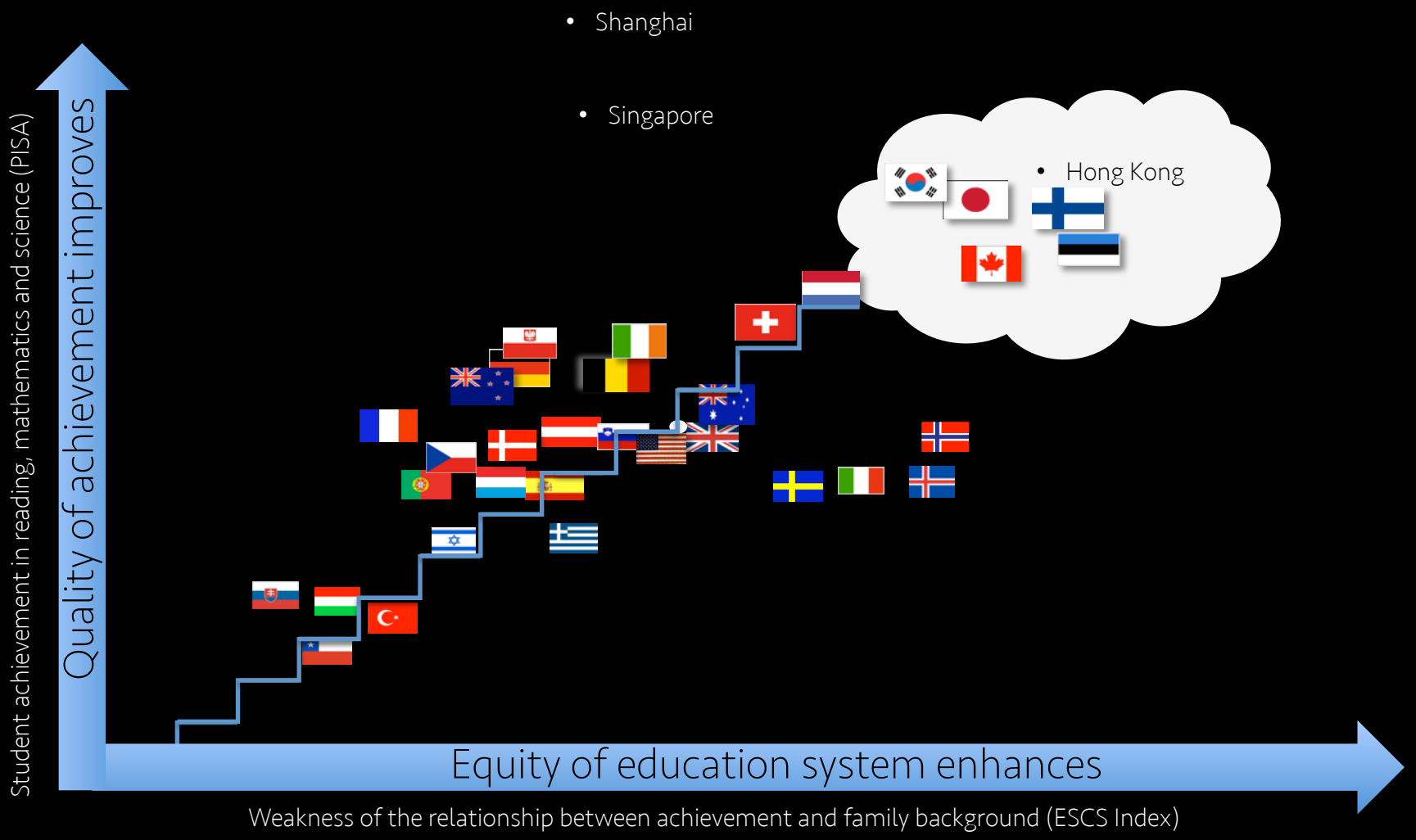
Review education policies

Examine the OECD's extensive research and analysis of education policy around the world.

SCENARIO:
“Schools will diminish but education will flourish when robots and machines will take the roles of teachers.”

Correlation or causation?


Weak equity and high quality
Strong equity and high quality
Weak equity and low quality
Strong equity and low quality
Quality of achievement improves
Student achievement in reading, mathematics and science (PISA)
Equity of education system enhances
Weakness of the relationship between achievement and family background (ESCS Index)


• Shanghai
• Singapore
• Hong Kong
Quality of achievement improves
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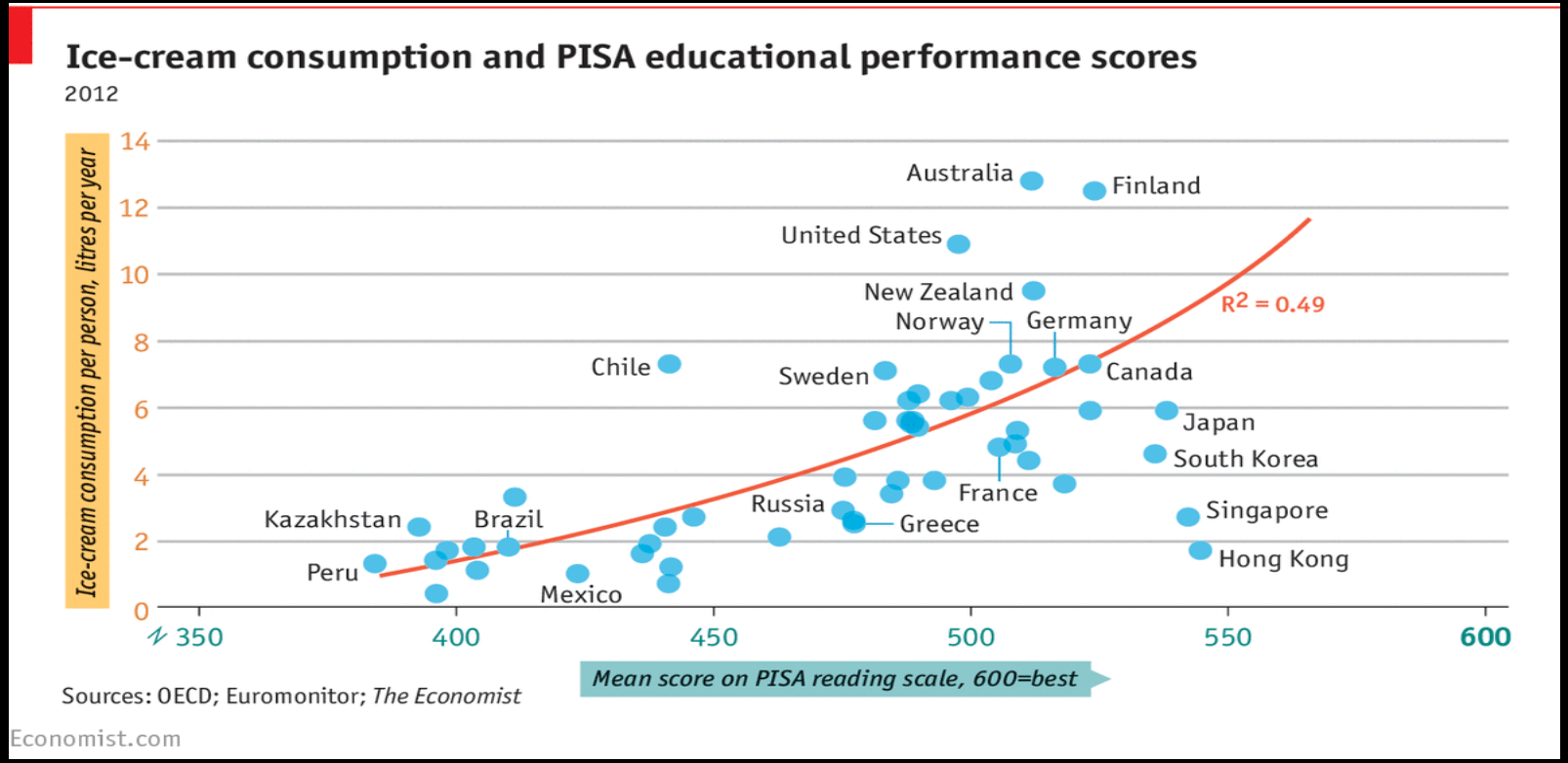
Eat more ice-cream!



SMALL DATA

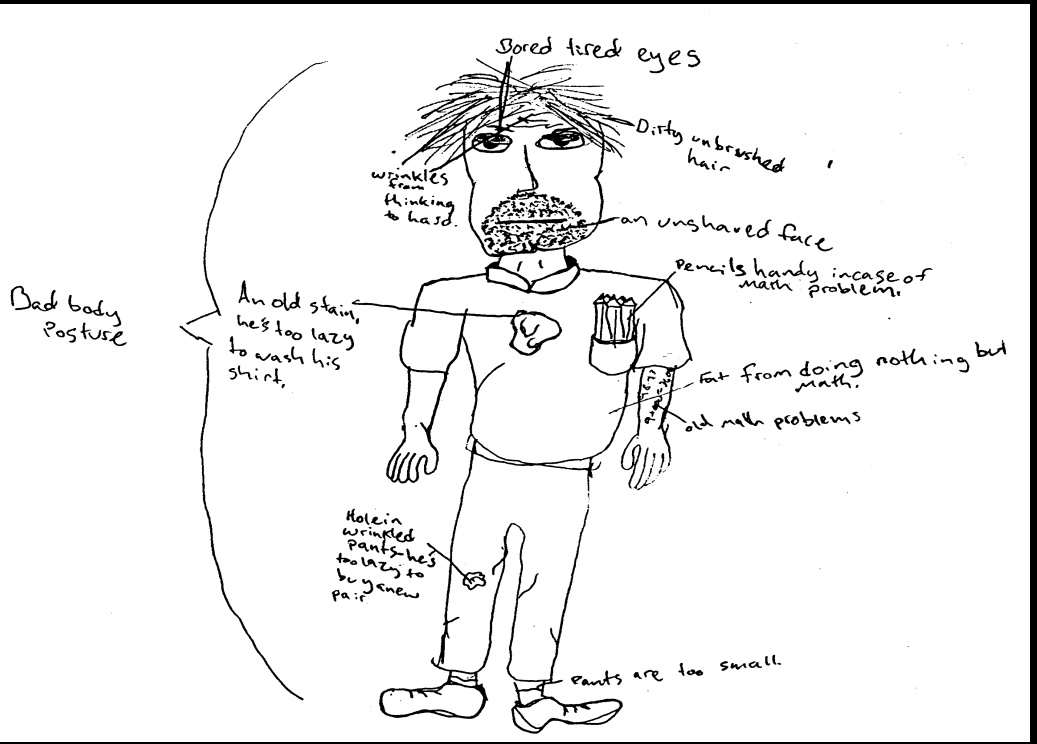
Tiny clues found in schools that can uncover important relationships about teaching and learning.

Small Data can reveal causations.

Power of Small Data:

Why many kids don’t like mathematics?

Understanding students' beliefs



Usually fat male

Unstylish

No friends - except other mathematicians

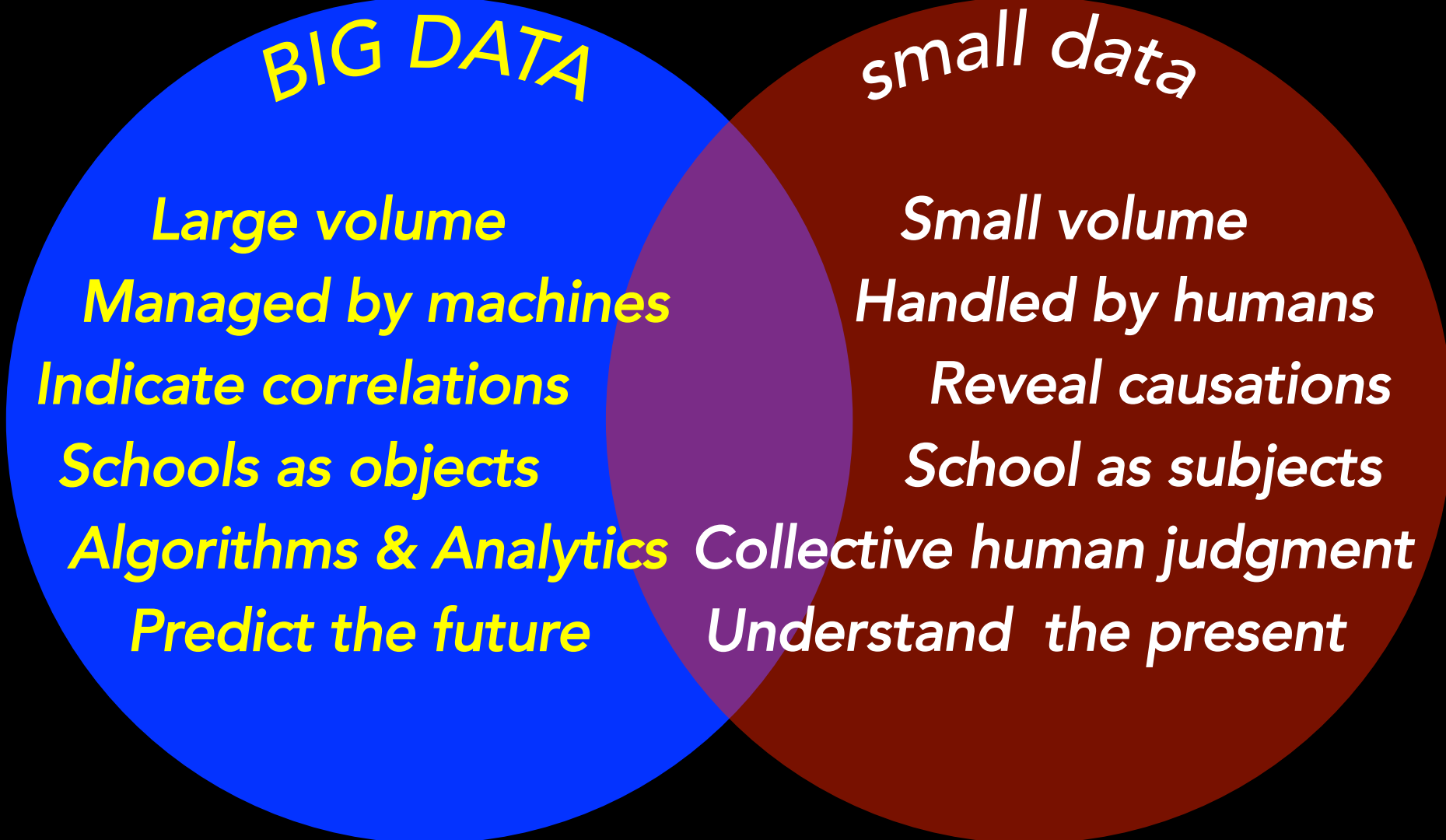
No romantic relationships or social life

Wrinkles in their forehead from thinking so hard

Very short tempers.

What to do next?

Talk about Small Data


BIG DATA
small data
Large volume
Managed by machines
Indicate correlations
Schools as objects
Algorithms & Analytics
Predict the future
Small volume
Handled by humans
Reveal causations
School as subjects
Collective human judgment
Understand the present

Use Small Data

Authentic assessments

Be aware of tiny details

Collaborative practices

If you don’t lead by Small Data, you’ll be led by Big Data

THANK YOU!

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