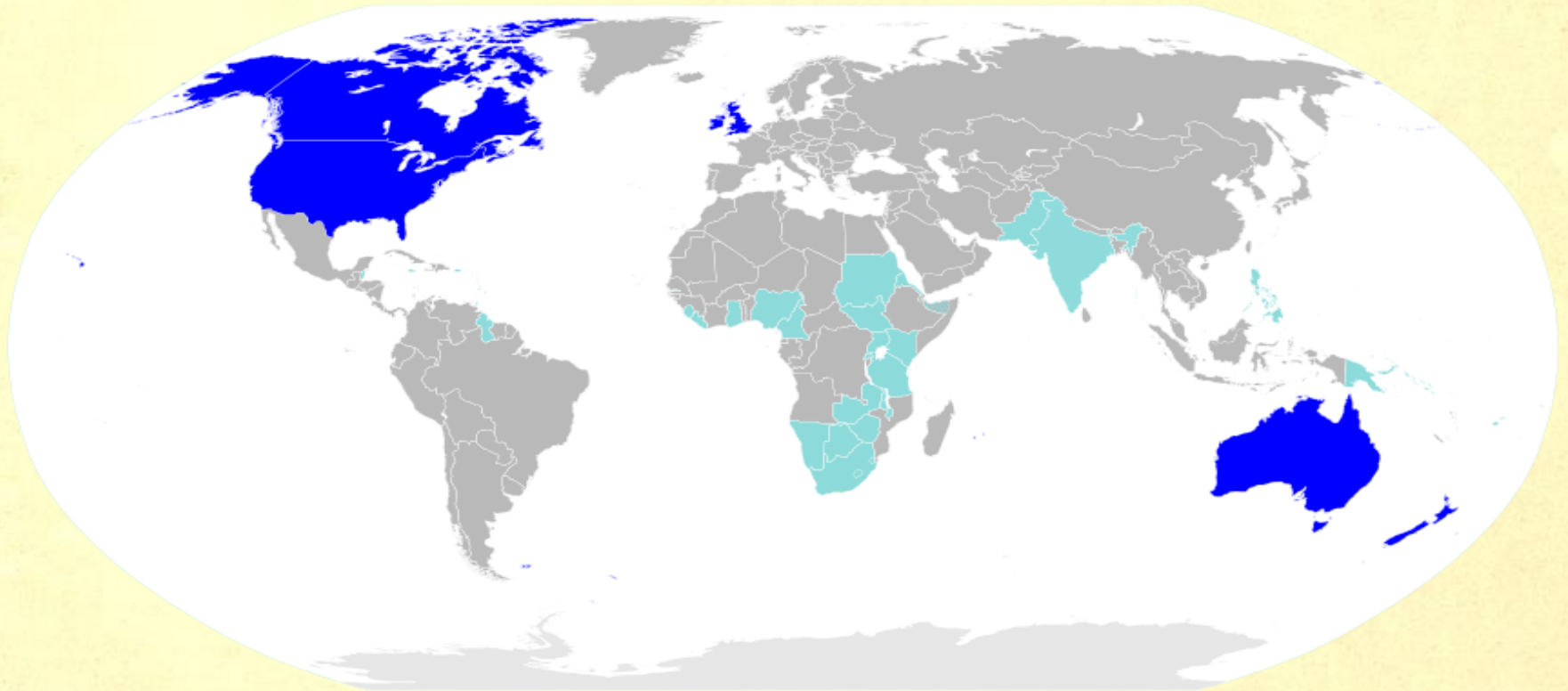


SCIENCE 2.0 ARRIVED — AND NOW WHAT?

PAWEŁ SZCZESNY,
IBB PAS & WARSAW UNIVERSITY

INSTEAD OF „THANK THE ORGANISERS FIRST“: THE CURSE OF MONOLINGUALISM



COUNTRIES IN WHICH ENGLISH IS THE FIRST LANGUAGE OF THE MAJORITY OF THE POPULATION

COUNTRIES WITH SUBSTANTIAL ADOPTION OF ENGLISH

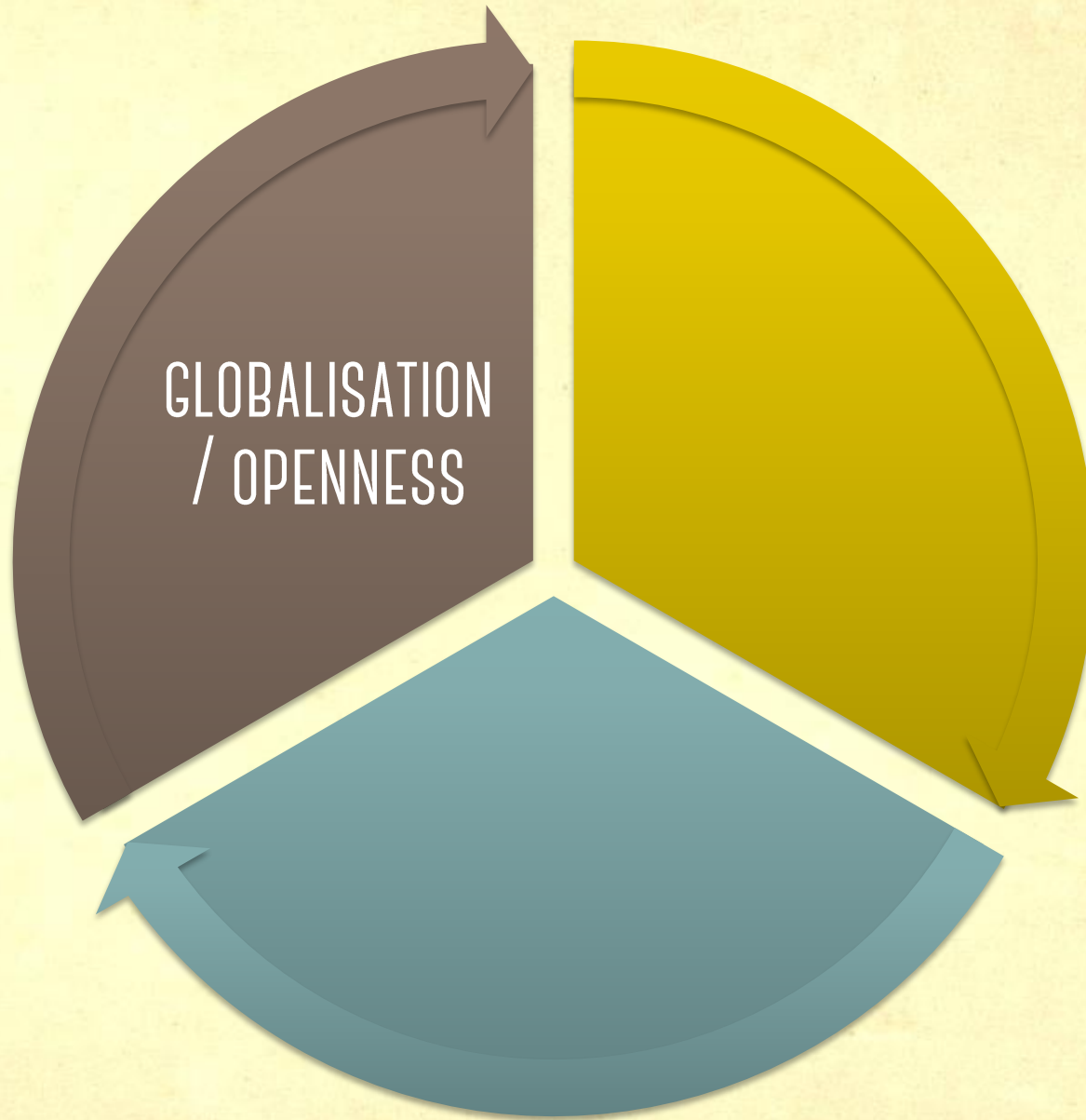
OFFICIAL DEFINITION

SCIENCE 2.0 - INVESTIGATION OF HOW SOCIAL MEDIA CHANGE
RESEARCH AND PUBLICATION PROCESSES

ALTERNATIVE DEFINITION

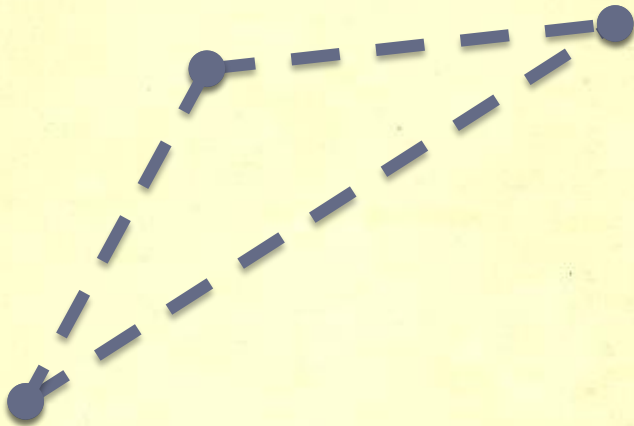
SCIENCE 2.0 - OPENING INFORMAL COMMUNICATION BETWEEN SCIENTISTS AND BETWEEN
SCIENTISTS AND GENERAL PUBLIC, AN ELEMENT OF A LARGER PROCESS
CALLED „OPEN SCIENCE“

AS SUCH, SCIENCE 2.0 IS NOT A MECHANISM, BUT A FUEL FOR OTHER MECHANISMS



SCIENCE GOES GLOBAL

COAUTHORSHIP DISTANCES



1980 — 334 km

2009 — 1500 km

ALL TRANSBORDER COMMUNICATION



1%



2%



17%

~~UN~~REASONABLE EXPECTATIONS



OPEN FOR EVERYBODY

?



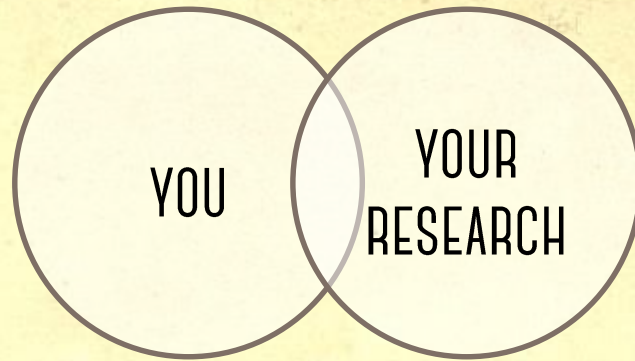
OPEN MONDAY AND THURSDAY,
FOR BLUE CARS WITH ENGINES
OF AT LEAST 200HP



RESEARCH ASSESSMENT IS ONE OF THE MAJOR FORCES SHAPING SCIENTIFIC LANDSCAPE

EXAMPLE: DIFFERENCE BETWEEN
“QUESTION FIRST” AND
“DATA FIRST” APPROACHES

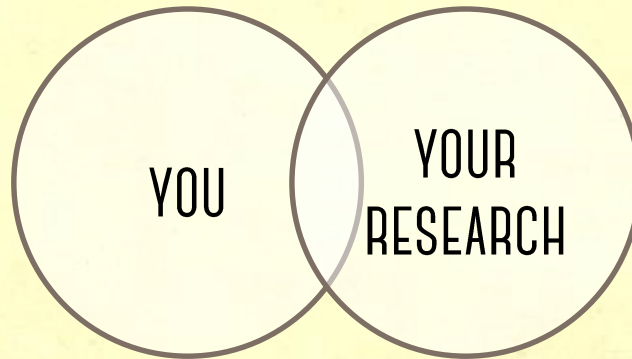
OLD TIMES



LEGIBLE

LOW NUMBER OF
OUTPUTS, EASY TO ASSESS

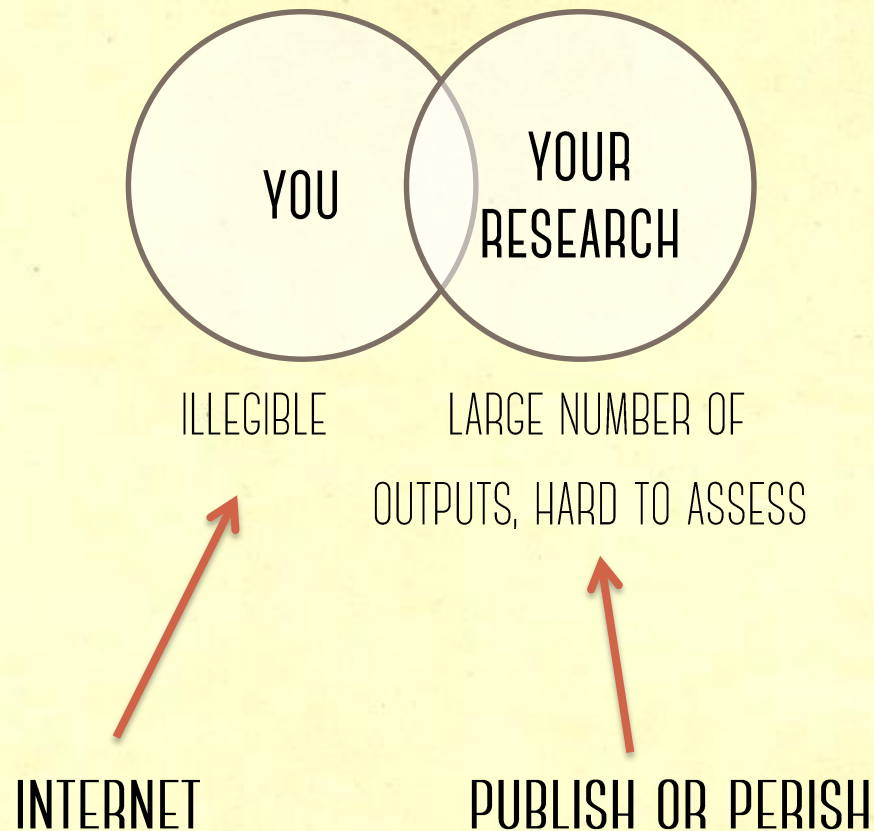
NEW TIMES



ILLEGIBLE

LARGE NUMBER OF
OUTPUTS, HARD TO ASSESS

WHERE DOES „THE NEW“ COME FROM?



ILLEGIBILITY EXPLAINED

ON THE INTERNET, NOBODY KNOWS YOU'RE A DOG

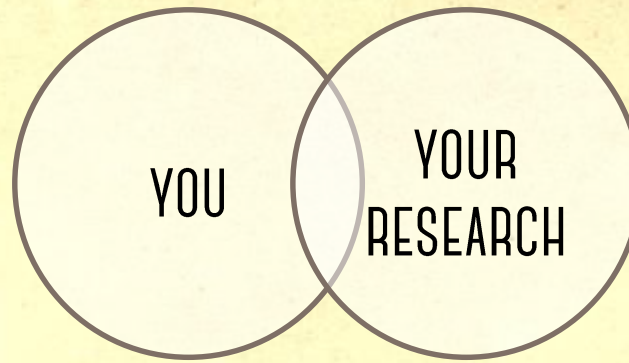
PETER STEINER, CARTOON FROM 1993

ON THE INTERNET, NOBODY CARES YOU'RE A PROFESSOR

ON THE INTERNET, YOUR STATUS BECOMES **ILLEGIBLE**

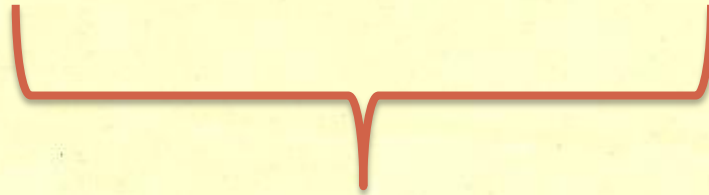
EXAMPLE OF ATTACHMENT TO LEGIBILITY

UK' s RESEARCH ASSESSMENT EXERCISE FROM 2008
IGNORED PUBLICATIONS FROM FULL-TIME RESEARCHERS
EMPLOYED ON **FIXED TERM CONTRACTS** UNLESS THOSE
CAN BE ALSO CREDITED TO A MEMBER ELIGIBLE FOR RAE).



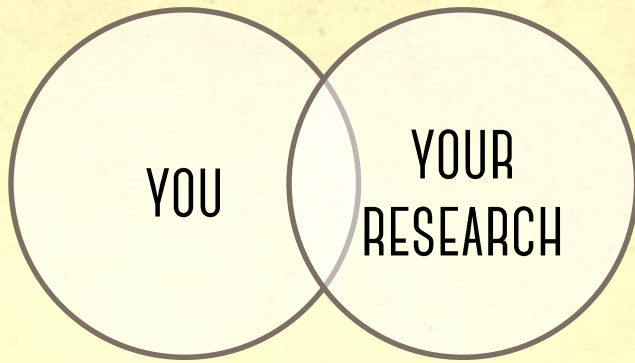
ILLEGIBLE

LARGE NUMBER OF
OUTPUTS, HARD TO ASSESS



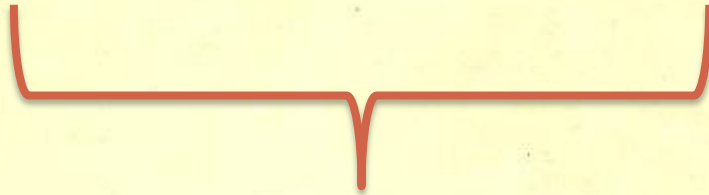
NEEDS SUPPORTING DATA:

- CITATIONS, CITATIONS SQUARED
- REUSES
- SOCIAL MEDIA PROFILE/IMPACT
- REAL-LIFE IMPACT, I.E. ECONOMIC, ETC.



ILLEGIBLE

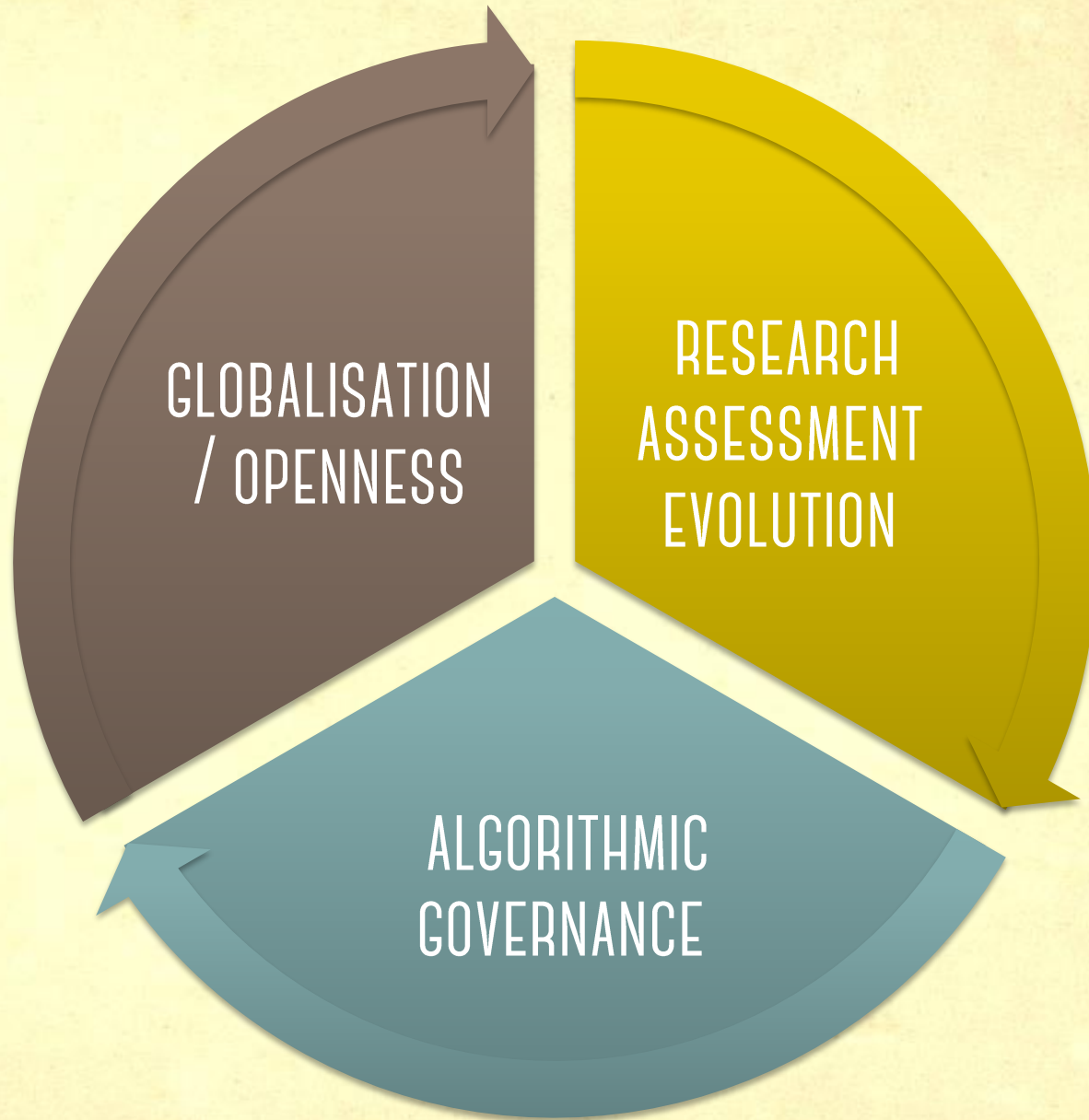
LARGE NUMBER OF
OUTPUTS, HARD TO ASSESS



NEEDS SUPPORTING DATA:

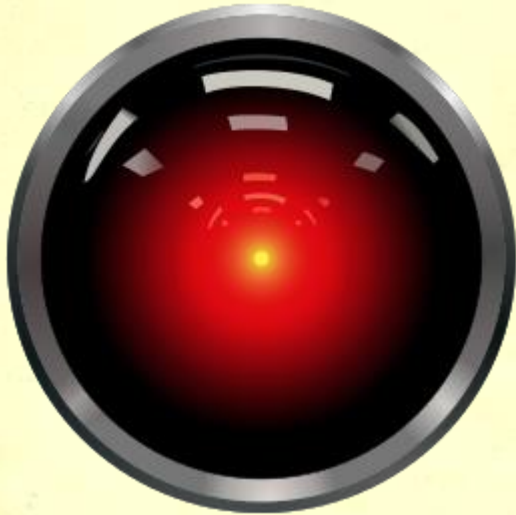
- CITATIONS, CITATIONS SQUARED
- REUSES
- SOCIAL MEDIA PROFILE/IMPACT
- REAL-LIFE IMPACT, I.E. ECONOMIC, ETC.

REAL TIME!



TRENDS TOWARDS ALGORITHMIC GOVERNANCE

SCHOOL GRADING



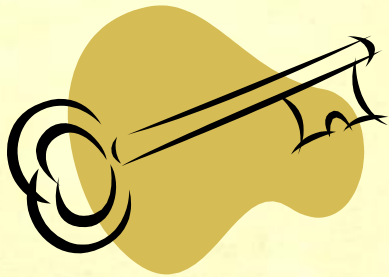
DONOR-PATIENT MATCHING

GOOGLE SEARCH ENGINE RANKINGS

WIKIPEDIA BOTS

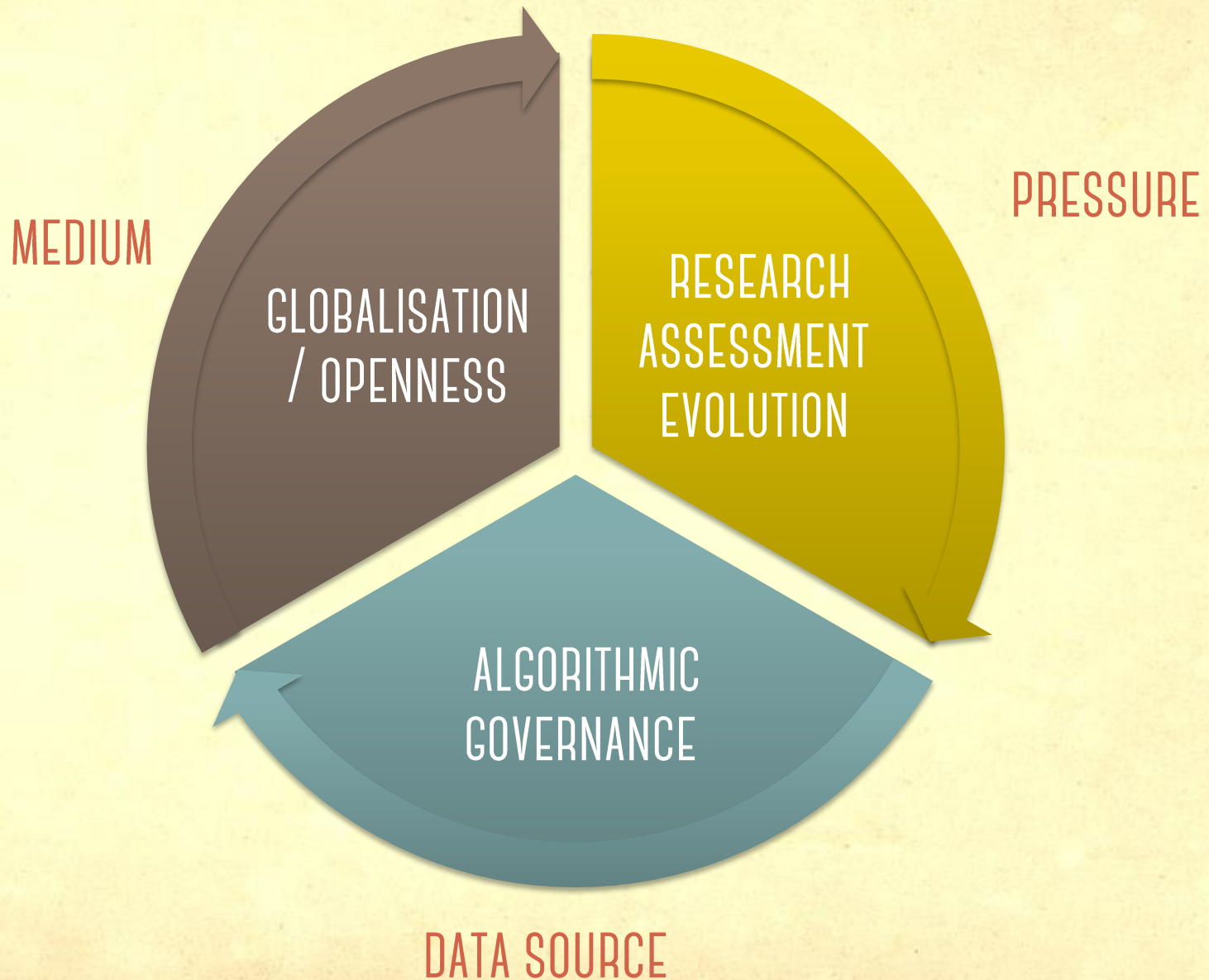
INCREASED USAGE OF COMPLEX* RESEARCH METRICS

„FROM 2010, SCIENCE, TECHNOLOGY, ENGINEERING AND MEDICINE (SO-CALLED STEM SUBJECTS) WILL BE ASSESSED USING STATISTICAL INDICATORS, KNOWN AS METRICS, SUCH AS THE NUMBER OF POSTGRADUATE STUDENTS, THE NUMBER OF TIMES RESEARCH IS CITED BY OTHER ACADEMICS, AND THE AMOUNT OF MONEY A DEPARTMENT BRINGS IN THROUGH ITS RESEARCH. RESEARCH IN THE ARTS, HUMANITIES, SOCIAL SCIENCES AND MATHS, ON THE OTHER HAND, WILL BE JUDGED BY THE OLD METHOD OF PEER REVIEW, INFORMED BY METRICS. „ *GUARDIAN, 2007*



* COMPLEX DUE TO BEING UNIVERSAL

WHERE ARE SOCIAL MEDIA HERE?



„CHANGE ALWAYS IS“

IF SO, WHERE WE ARE HEADING?

THE GOOD

CONSEQUENCES

INCREASE IN MASSIVELY COLLABORATIVE RESEARCH — EXAMPLE: POLYMATH
PROJECT

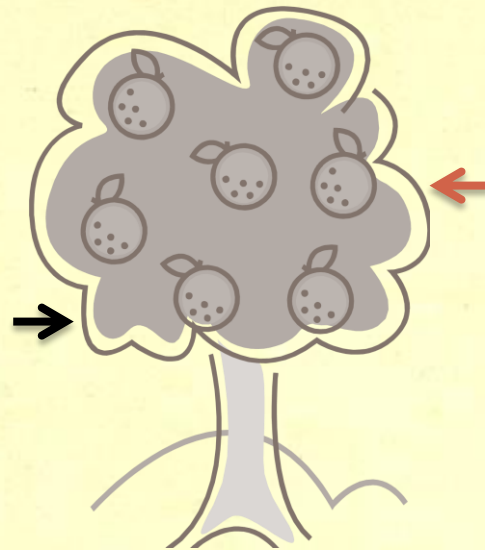
EMERGENCE OF COMPLEX SUPERPROJECTS — EXAMPLE: LHC

INCREASED EFFICIENCY OF RESEARCH ASSESSMENT — EXAMPLE: OPEN PEER
REVIEW

THE BAD

IMMEDIACY OF RESEARCH ASSESSMENT → LARGE SPEED OF PUBLISHING

CHANGE OF STRATEGY TO HAVE A LARGE NUMBER OF RESEARCH OUTPUTS



FROM THE LOWEST HANGING FRUIT TO THE FRUIT ONE CAN GET THE FASTEST

CONSEQUENCES

LONG-TERM PROJECT WILL SHIFT TO SHORT-TERM ONES,
INFLUENCING RESEARCH TOPICS PURSUED

NUMBER OF MIDDLE-SIZED RESEARCH GROUPS WILL GO DOWN,
DUE TO INSUFFICIENT MOBILITY OF SUCH GROUPS

COMPLEX METRICS CREATE INCENTIVE TO GAME THEM DUE TO:

1. LOW CHANCE OF BEING CAUGHT

2. DUE TO COMPLEXITY OF THE ALGORITHM, IT ' S NOT UNETHICAL ANYMORE,
IT ' S THE WEAKNESS OF THE ALGORITHM

CONSEQUENCES

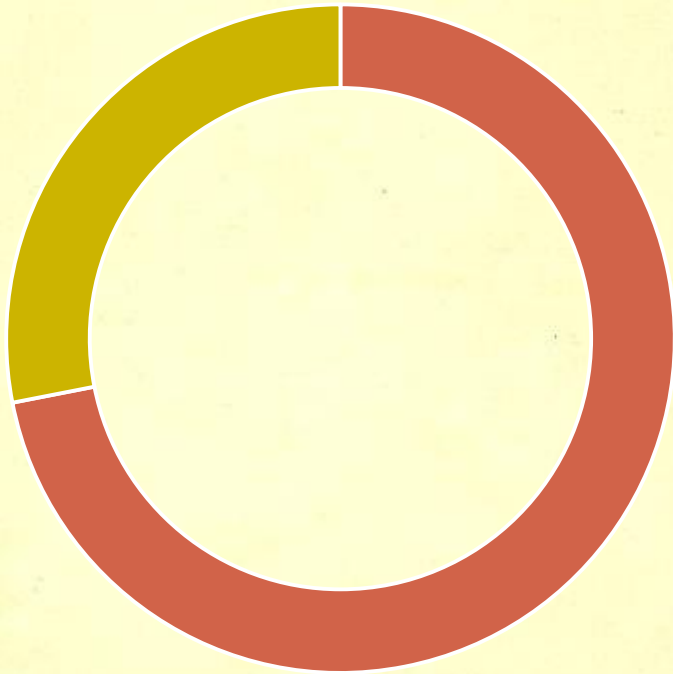
METRICS WILL BE GAMED WITH AN INCREASED SOPHISTICATION
- EXAMPLES: REF POACHING, OR SECRET CITATIONS CIRCLES

THE UGLY

LOSS OF IDEA-DIVERSITY

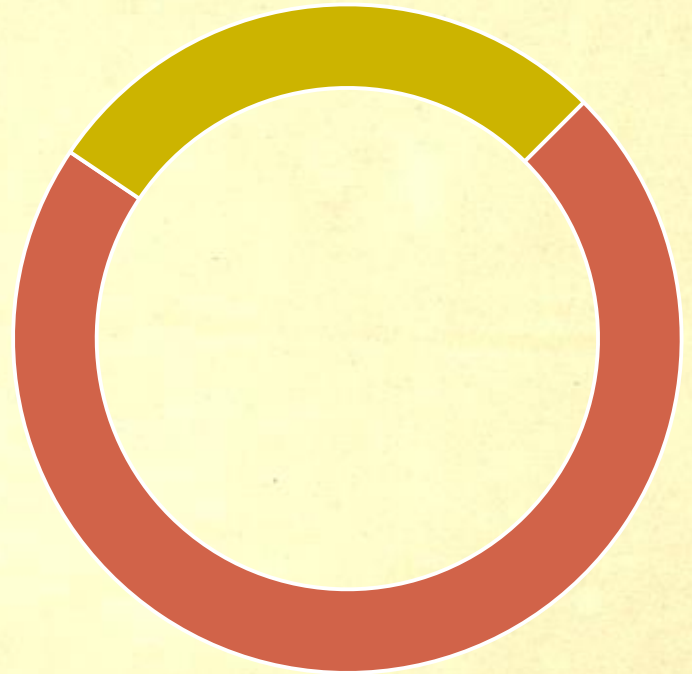
THAT IS NOT A PROBLEM

RESEARCH TOPICS



■ NON-INTERESTING ■ INTERESTING

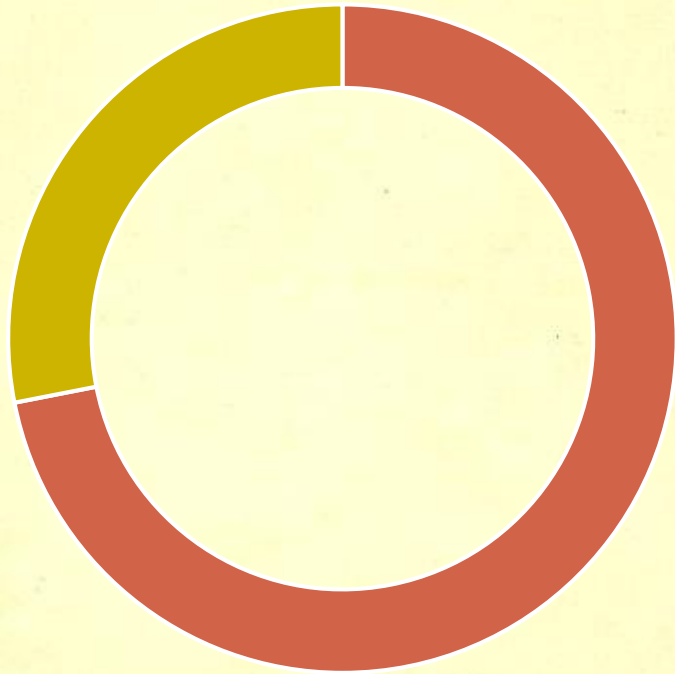
RESEARCH TOPICS



■ NON-INTERESTING ■ INTERESTING

THAT IS A PROBLEM

RESEARCH TOPICS



■ NON-INTERESTING ■ INTERESTING

RESEARCH TOPICS



NON-INTERESTING ■ INTERESTING

THANK YOU FOR YOUR ATTENTION

PAWEL SZCZESNY
ps@pawelszczesny.org