Globality & Disciplinarity in the Serials Universe

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PART ONE

- Global and national trends
  - Publishers
  - Journals
  - Articles
  - National productivity
  - Author differences by country

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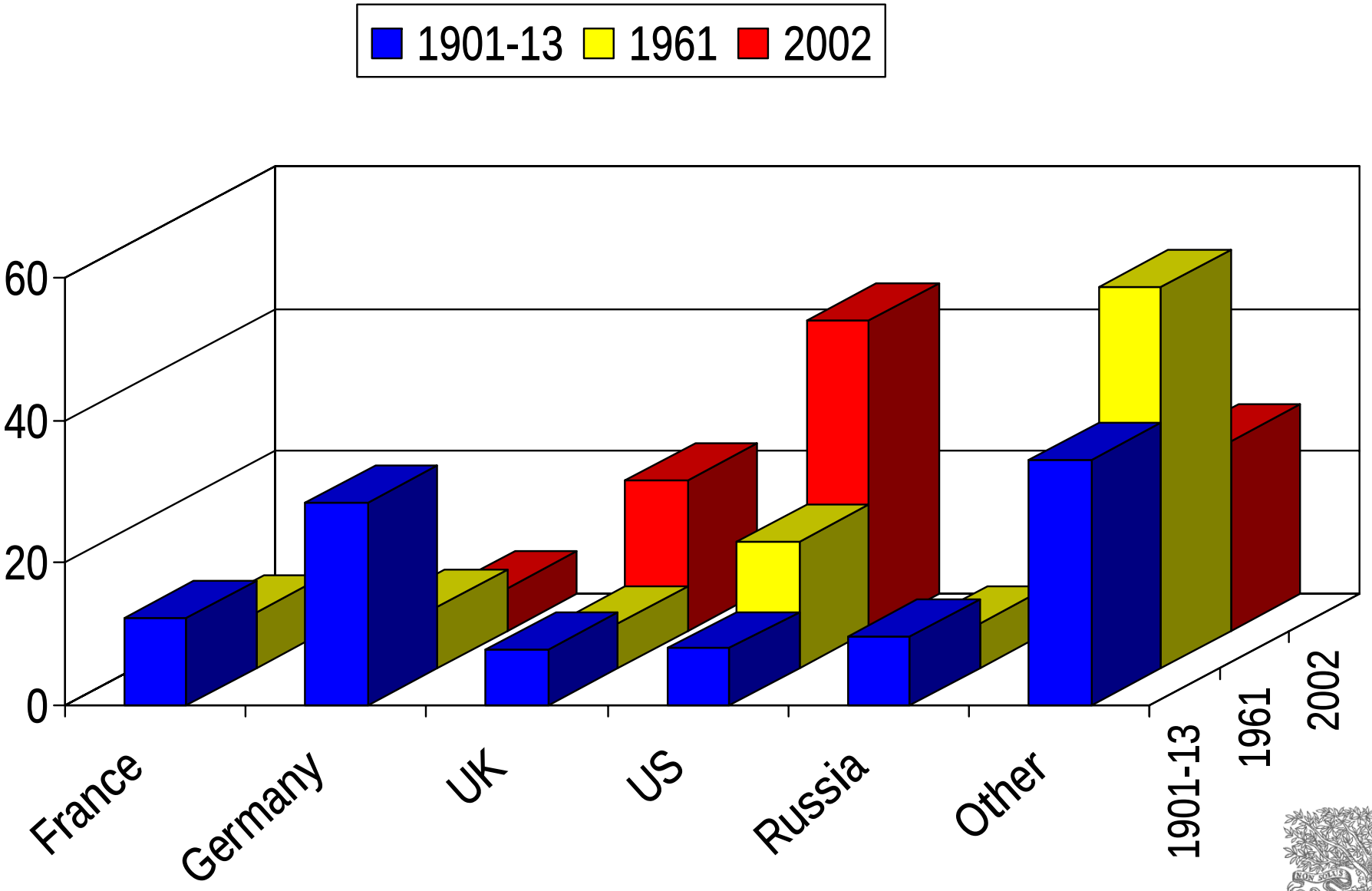
Journals Produced in Different Countries



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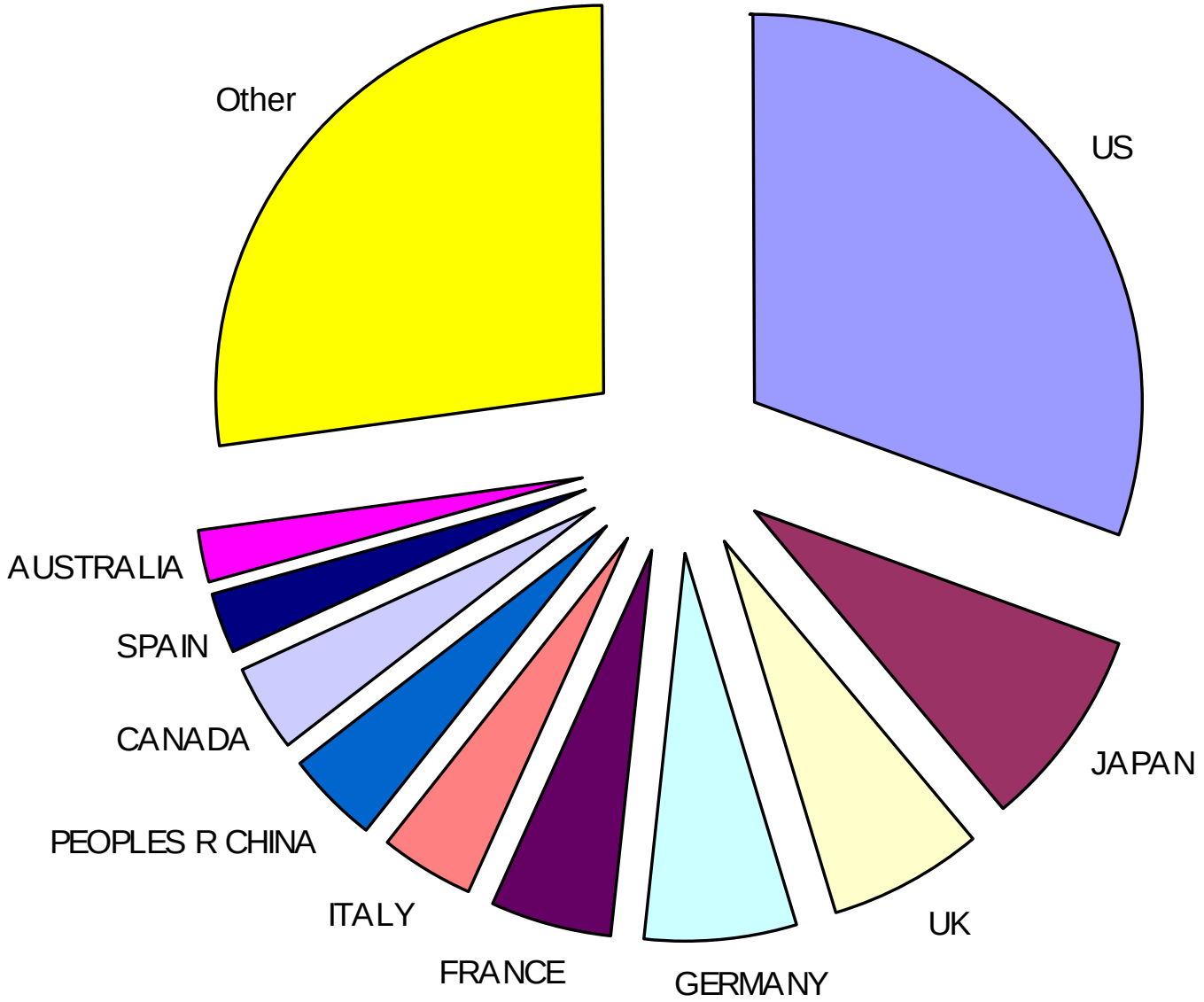
National Shares of Scholarship: 2002 Data



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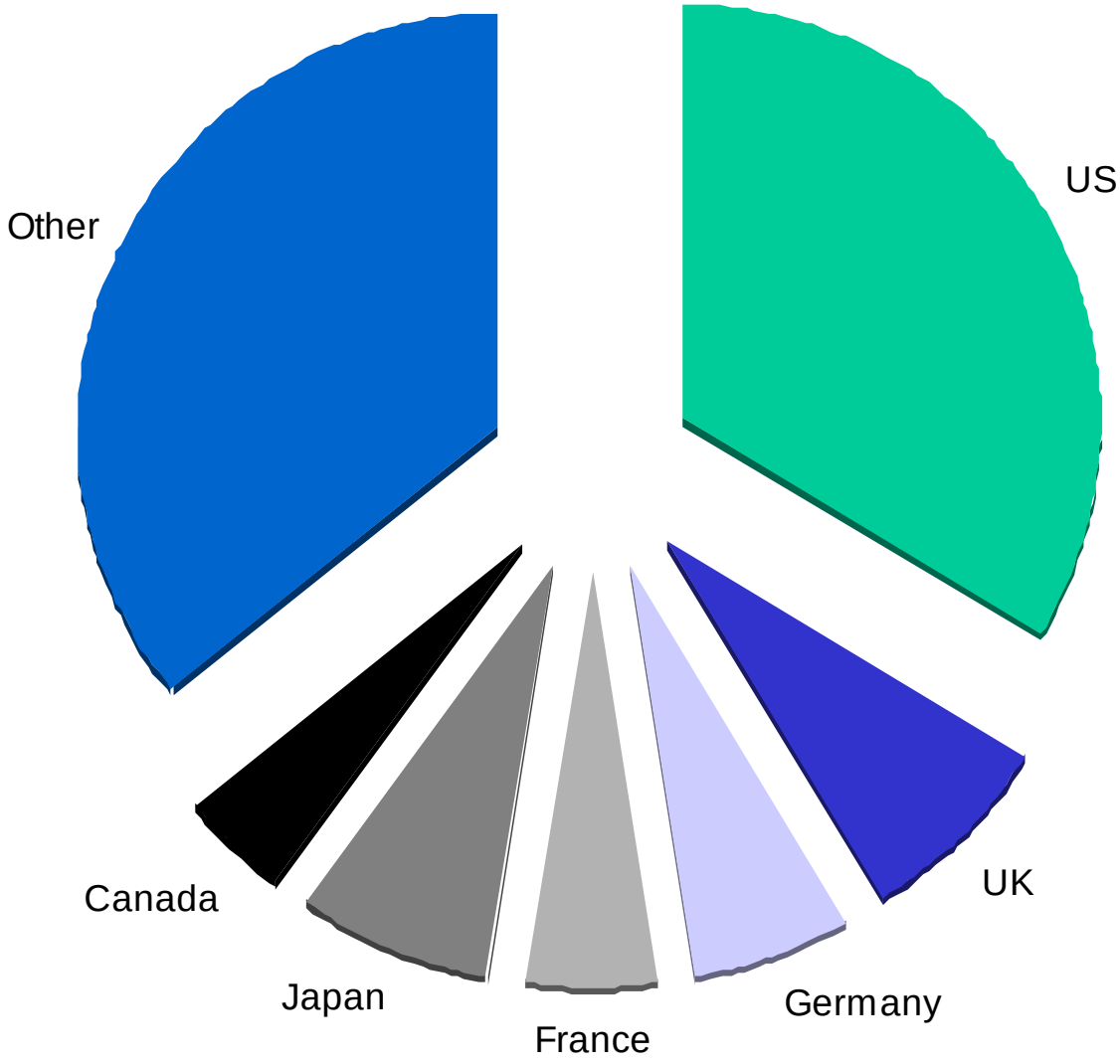
National Shares of Scholarship: 1975 Data



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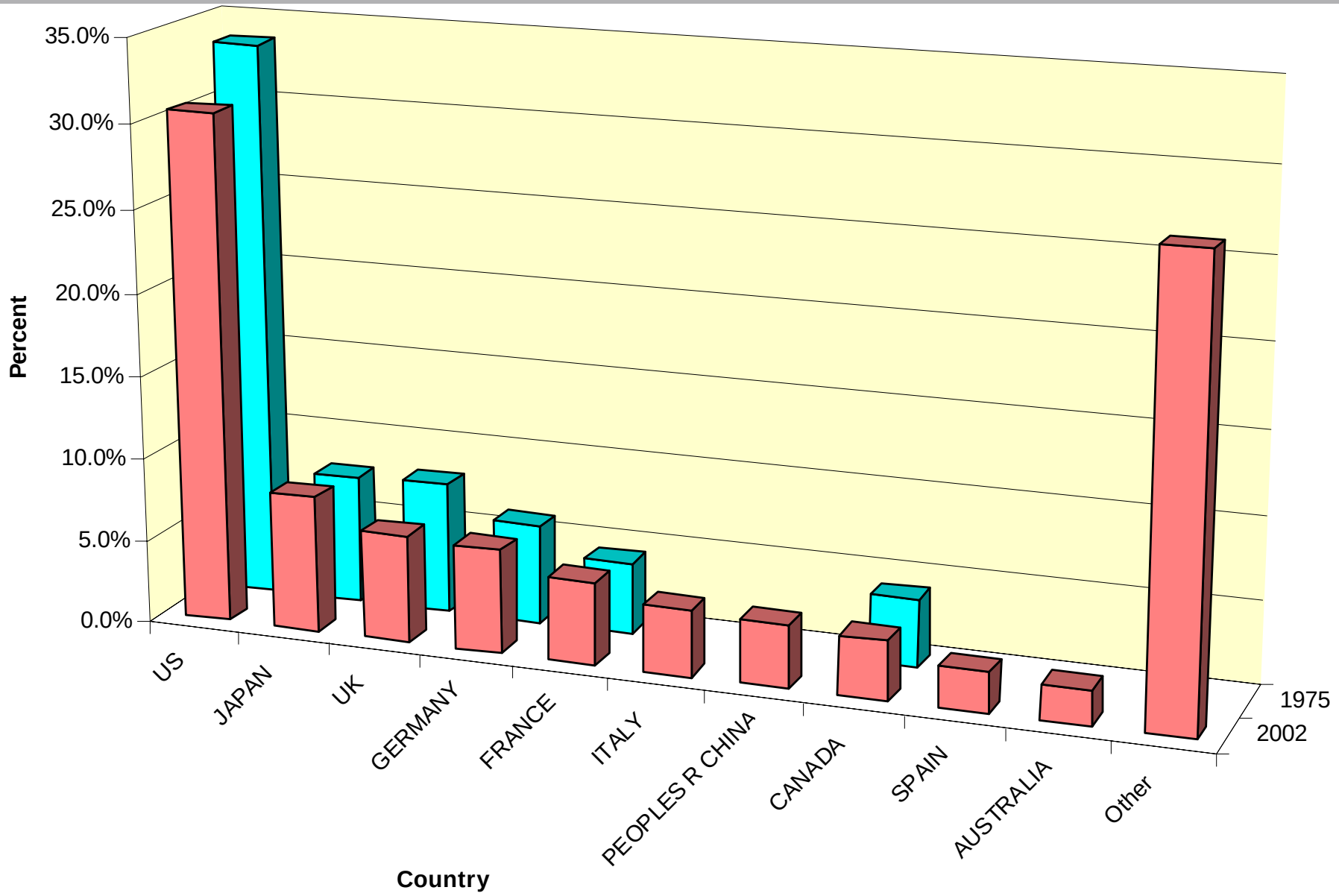
Winners & Losers of National Share 1975-2002



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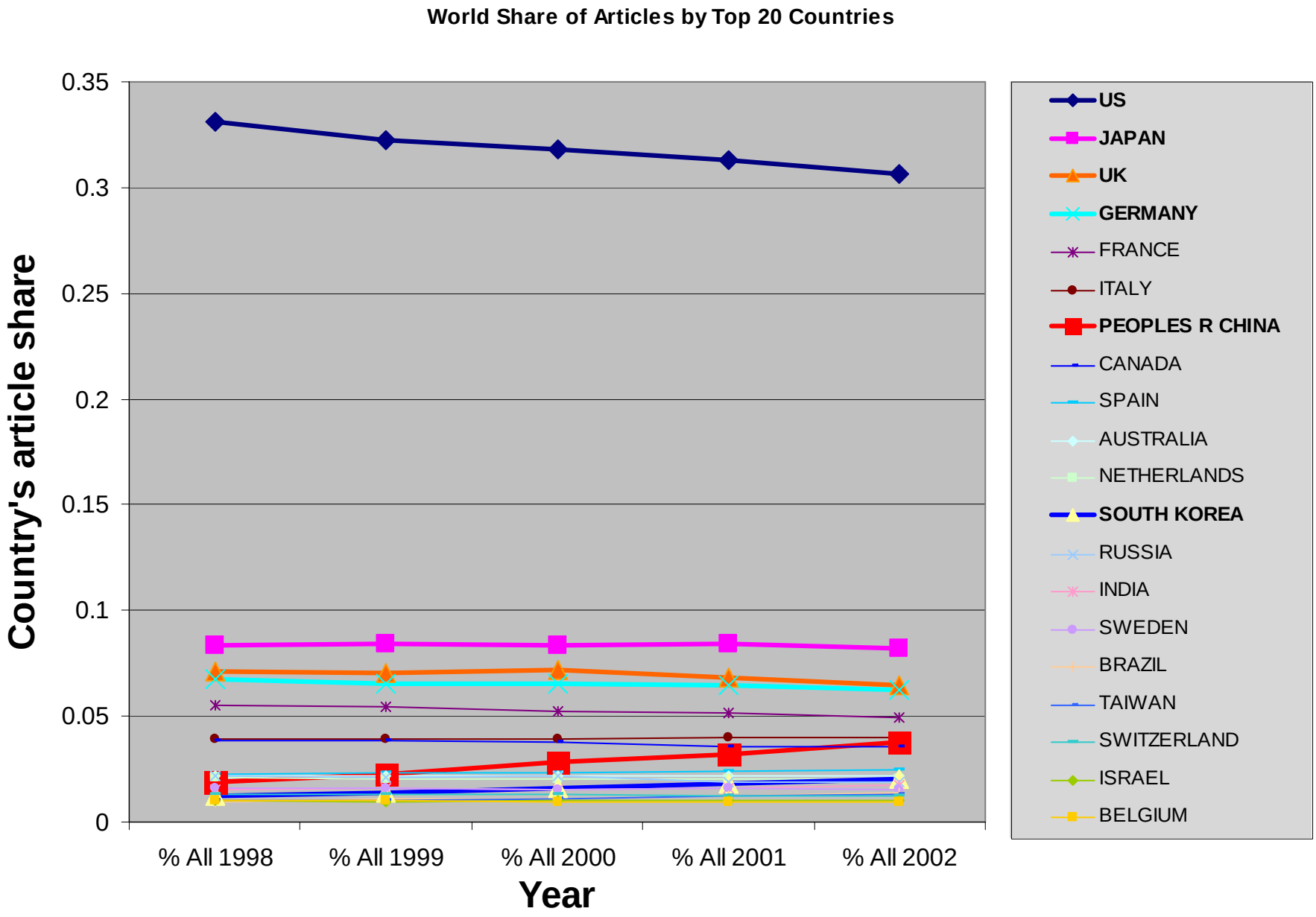
Winners & Losers: Last Five Years



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Nationality & Author Behaviour

Nation	References given per paper	% references to same nation papers (self-cites)	Observed self-cites/ expected (%)
US	7.206	70.7	211
UK	6.054	38.3	486
Germany	5.845	29.6	496
France	5.998	28.0	571
Japan	4.151	31.1	402
Canada	6.186	25.4	626

Source: Frame & Narin *Research Policy* 17.203-13, 1988

PART TWO

- Disciplinary differences
  - Journal characteristics by area
  - Relative sizes of disciplines
  - Author behaviour per discipline
    - Journals vs books
    - Peer review & preprints
    - Collaboration & productivity

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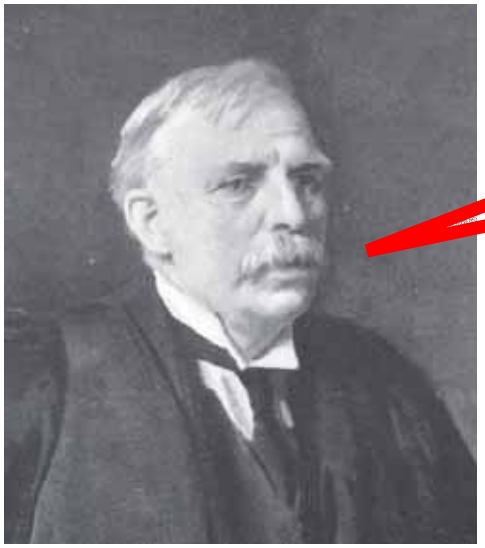
One View of Disciplinary Differences…

There's physics…
and then there's
stamp-collecting



Lord Rutherford

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Another View…

Those who think and get somewhere are mathematicians. Those who think and don't get anywhere are philosophers. Those who don't think and get somewhere are the natural scientists.

Those who don't think and don't get anywhere are the humanists.

Contributor at a meeting of American Council of Learned Societies

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US Scholarly/Scientific Journals 1995

		Average Number per Title		
Field of Science	**Number of Journals**	**Articles**	**Pages**	**Pages per art.**
Physical Sciences	432	306	2604	8.51
Mathematics	206	127	2069	16.29
Engineering	828	163	1830	11.23
Life Sciences	2104	130	1396	10.74
Social Sciences	2140	38	918	24.11
ALL	**6771**	**123**	**1434**	**11.66**

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US Journals 1995 by Publisher Type

		Average Number per Title		
Type of Publisher	**Number of Journals**	**Articles**	**Pages**	**Pages per art.**
Commercial	2679	118	1533	12.99
Society	1557	202	1813	8.98
Educational	1106	70	1500	21.43
			786	9.36
			1434	**11.66**

Suggests Commercials concentrate on applied and engineering journals, Societies on pure disciplines, Educational on social science

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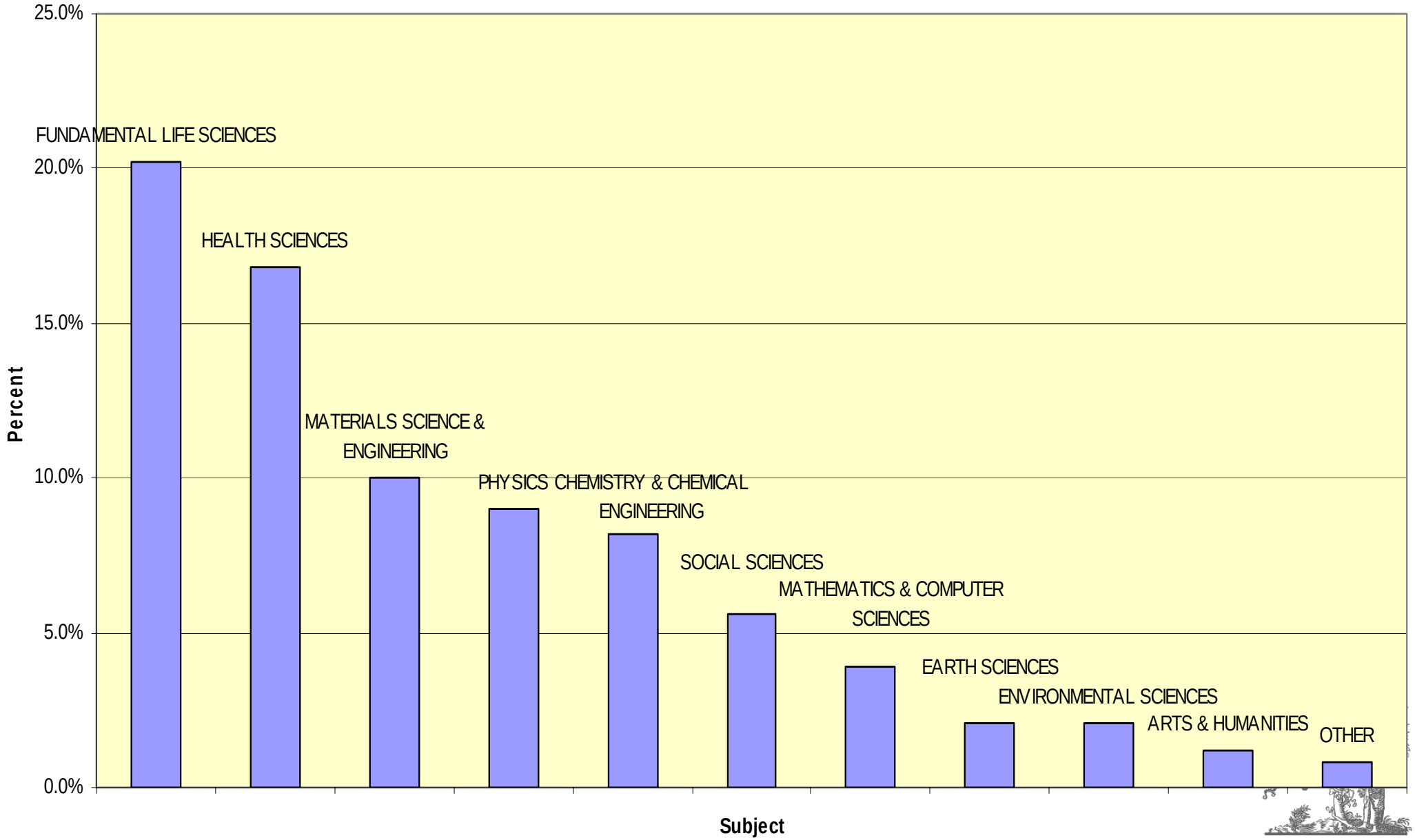
Discipline Sizes: 2002 Data



Source: ISI Research Data

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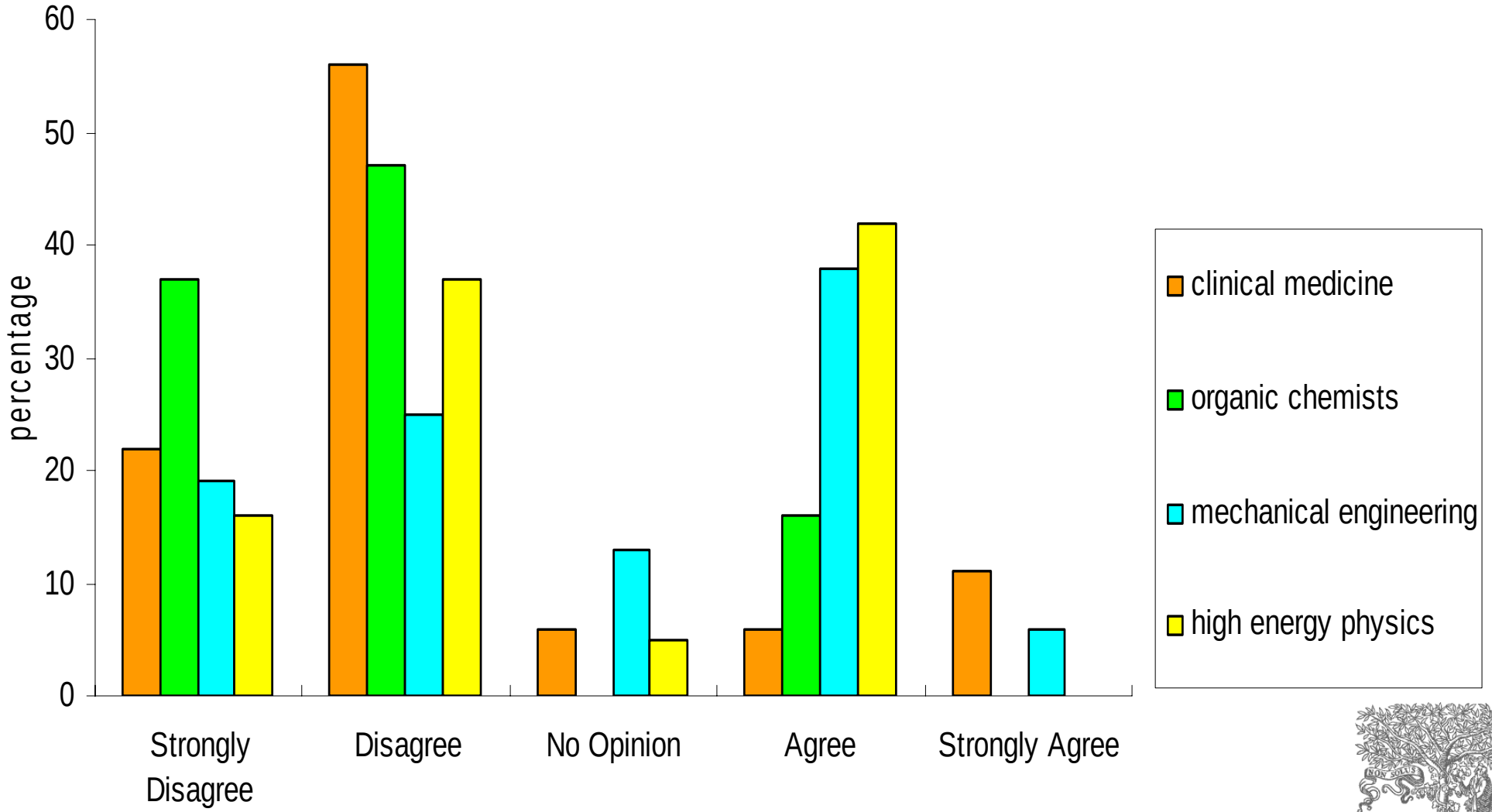
UK Faculty Per Capita Performance 1992

Subject	Authored books	Refereed Conference proceedings	Journal articles	Research students	Relative Research Council Income
Science	0.18	1.34	**5.52**	1.65	0.99
Technology	0.17	**3.57**	3.45	1.90	1.00
Medicine	0.15	1.99	**6.12**	0.82	0.44
Social Science	**0.64**	0.76	2.30	0.60	0.15
Humanities	**0.68**	0.74	2.73	0.56	0.06

Source: A J Meadows *Communicating Research*, Academic Press, 1998

When looking for specific information, researchers are not interested in the quality of the refereeing process



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Researchers are not interested in the quality of the refereeing: interviewees comments

AGREE

- "Researchers are able to referee themselves"

"Refereeing function is not important and has never had real influence or impact. It is useful in ministerial bureaucracies, but not in the scientific community."

- High Energy Physicists

DISAGREE

- "The quality of peer review is one of the biggest assets of a journal"

- Clinical Medic

"Wrong information is even worse than no information."

- Organic Chemist

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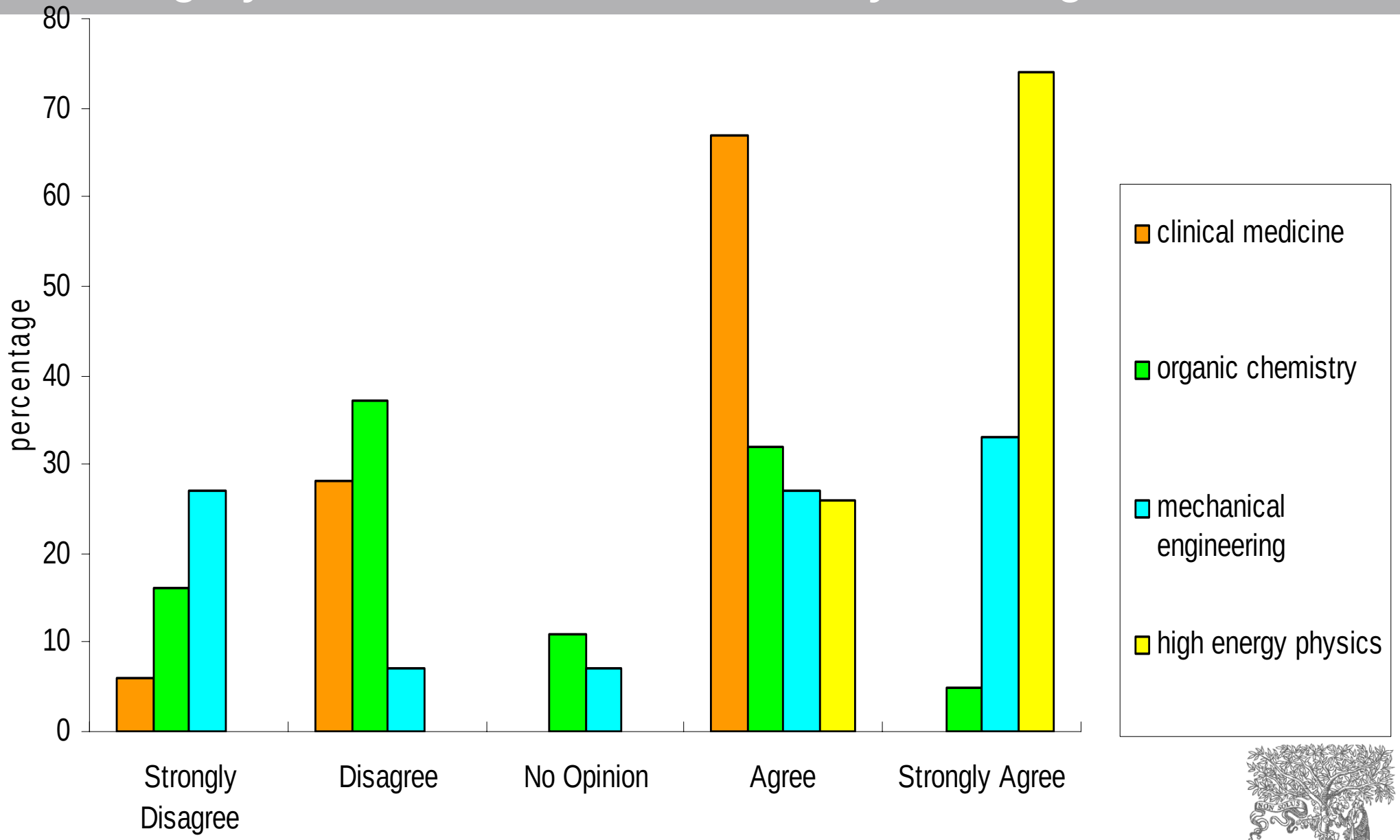
Readers will preferably use preprint databases or other so called grey-literature for their own early warning



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Use of Preprints for Early Warning: interviewees comments

AGREE

- "Personal communication will be replaced by desk-top information tools"
  – Organic Chemist
- "Preprint is useful, peer-review has a substantial time lag"
  – Clinical Medic

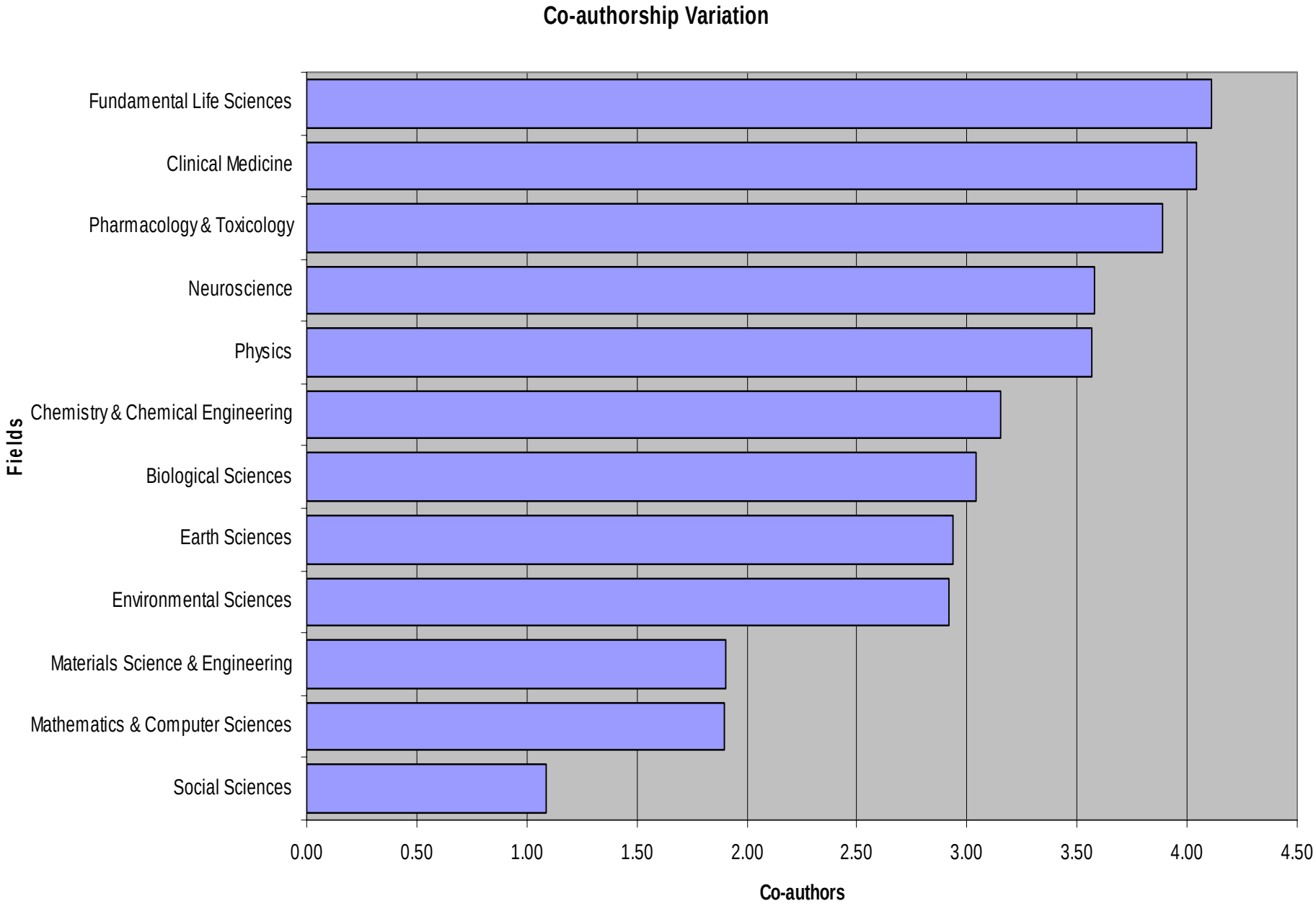
DISAGREE

- "One cannot rely on non-refereed articles, even abstracts are quite useless"
  – Neuroscientist
- "The need for early-warning is based on competition between individual scientists: it is relevant in a competitive enviornment but irrelevant scientifically"
- "Scientists use conferences for early-warning!"
  – Organic Chemists

Collaboration by Authors

- Average for all fields: 3.9
- Variation by discipline
  - Life sciences highest (4.4)
  - Mathematics lowest (about 1.9)
  - Special case: high energy physics
    - Co-authorship in 100s but very small field
- Variation over time
  - Has grown from an average of 1.8 to 3.9 over last fifty years

Collaboration by Discipline



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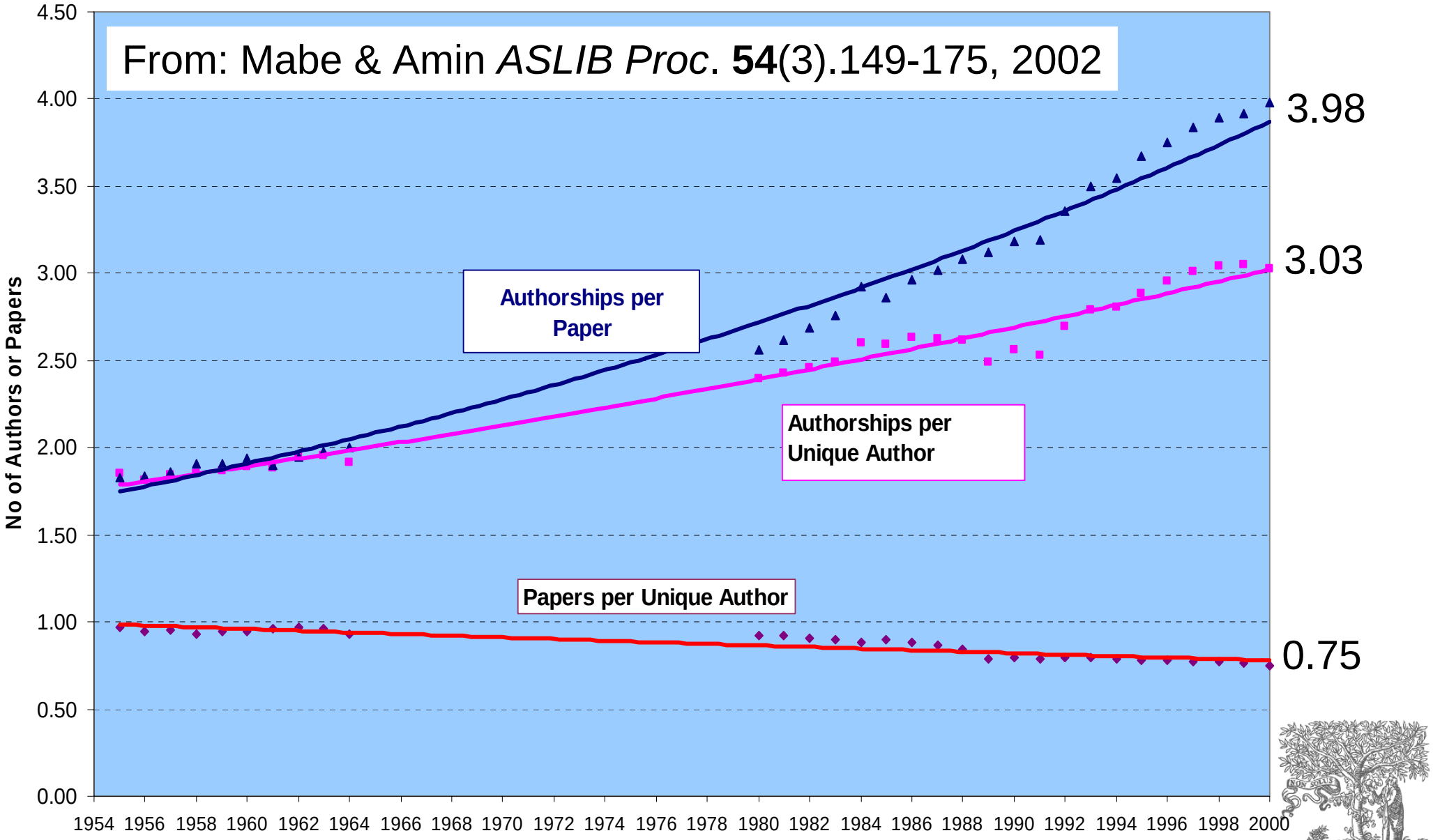
Collaboration and Productivity Over Time



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Global vs Local

- Nations
  - Local publishing to global
    - Multinational to Anglo-American in 20th C
    - To China in 21st?
- Disciplines
  - Global: fundamental in English
    - Physics, chemistry, life sciences
  - Local: applied, social & humanities in English & local languages
    - Medicine, politics, history, economics
  - Different scholarly traditions and behaviours
- International Collaboration
  - Growing and potentially could affect the model

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