



INTERNATIONAL ASSOCIATION OF SCIENTIFIC, TECHNICAL & MEDICAL PUBLISHERS

JOURNAL FUTURES: How will Researchers Communicate as the Internet Matures?

Michael Mabe
Chief Executive Officer, STM

Fiesole Retreat, Lund, August 2006

What is “stm”?

- International Association of Scientific, Technical & Medical Publishers www.stm-assoc.org
- ~ 100 members, both “for-profit” and “not-for profit”
 - ACS, AIP, AMA as well as Elsevier, Springer, Wiley, Blackwells, T&F, Sage etc.
- Secretariat in London, UK
- International trade association for all STM publishers
- Members publish about 62% of all journal articles each year

Fiesole, Amsterdam, 2002



- **“Books must follow Sciences, and not Sciences Books”**
 - Francis Bacon 1621
- Publications are the *end-point* of the process not the start
- To understand how to manage information we need to understand the processes
- User behaviour determines everything

Functions of the journal a la Oldenburg

- Date stamping or priority via registration
- Quality stamping through peer-review
- Recording the final, definitive, authorised versions of papers and archiving them
- Dissemination to targeted scholarly audience

- Achieved via management of the “journal brand”
 - (title and associated qualities for researchers)

Theory of the Long Tail 2004



- Common feature of statistical and probability distributions
- Very common in size distributions of publishers, libraries, words
- Subject of Chris Anderson's 2004 *Wired* article and recent book, in short:
 - “How our economy and culture is shifting from mass markets to million of niches enabled by the electronic transition”

In the Long Tail...

- **Users become even more in control**
 - Authority issues: sorting the wheat from the chaff
 - People
 - Pros (editors, peer reviewers)
 - Amateurs (bloggers, word of mouth, wikipedians)
 - Mobs (open review)
 - Software
 - Wisdom of crowds
 - » Buzz (Google PageRank)
 - » Ratings (systems that ask what you like)
 - » Behavioural (“people like you also chose...”)
 - Artificial intelligence (semantic analysis)
 - Marketing approaches change: identifying community
 - Business models change: tailored/specific rather than general
- **...so we better understand what they are doing!**

Finding Out: The Core Trends Study

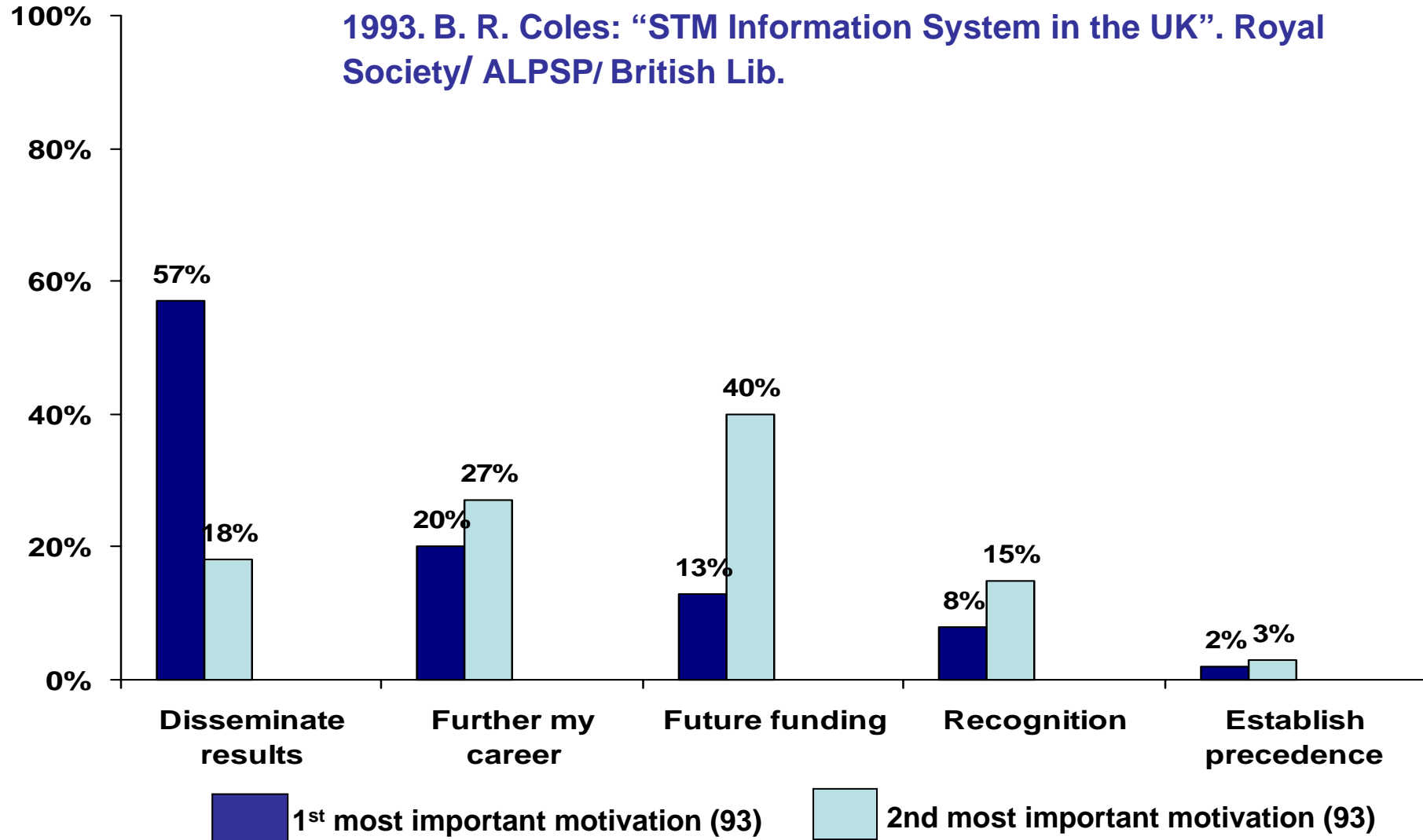
- Elsevier collaboration with NOP and CIBER
- Follow-up to previous Elsevier study in 1993-6, SuperJournal of 1993-5 and Coles study of 1993
- Objective: to understand how motivations and behaviour of researchers has been affected as internet use reaches early maturity
- The largest research project of its kind
 - 6,344 researchers completed an online survey
 - all subjects
 - all ages
 - global survey
- To fully understand these responses, a further 70 follow-up telephone depth interviews were completed in late 2005

Topics

- Motivations for publishing
- Funding bodies
- Quality versus quantity
- Prestige journals
- Peer review
- Publishers
- Browsing and reading behaviour
- Sharing data
- Different version of articles
- Permanent record
- Repositories

Motivations for Publishing

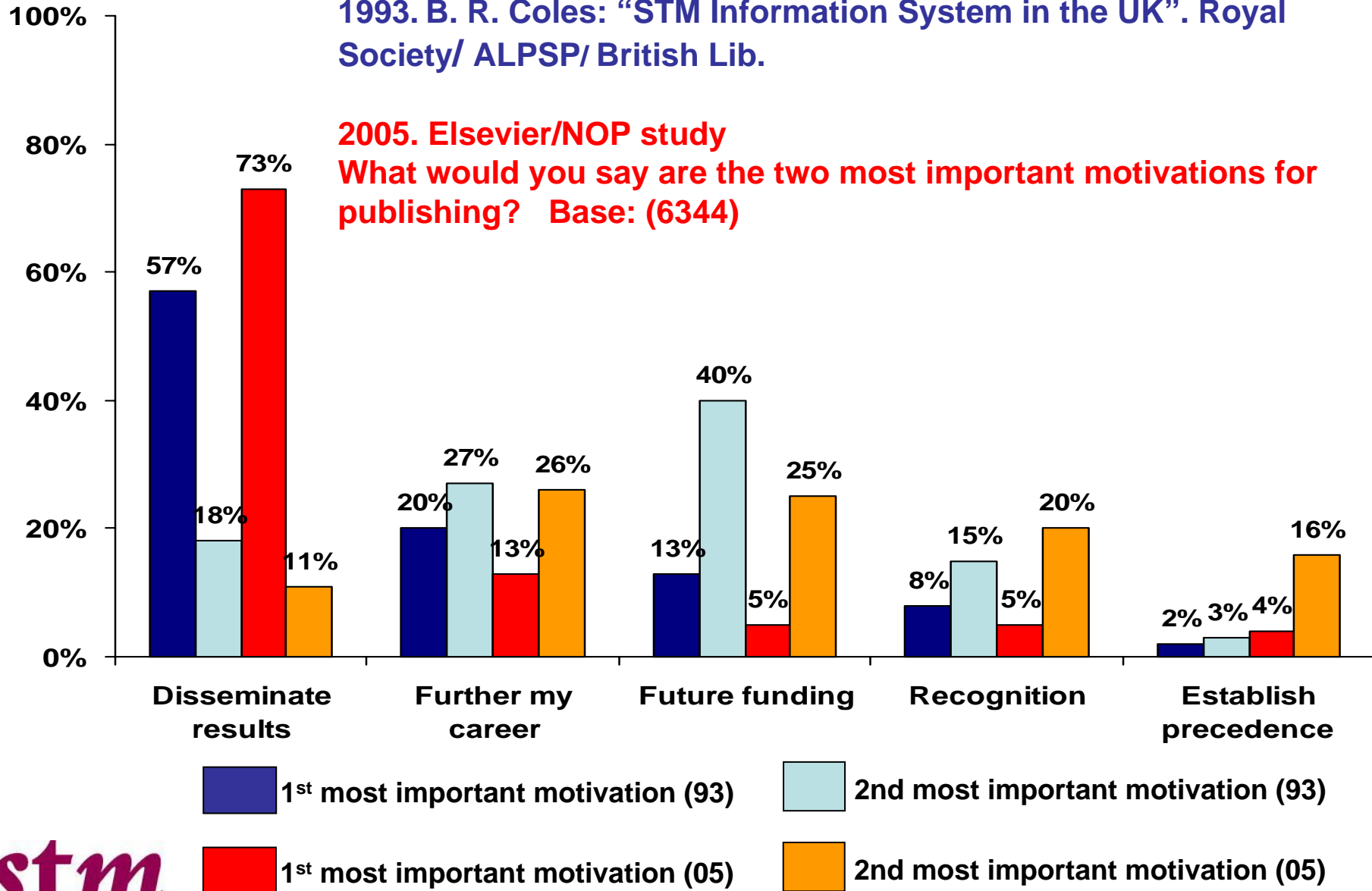
1993. B. R. Coles: "STM Information System in the UK". Royal Society/ ALPSP/ British Lib.



Motivations for Publishing

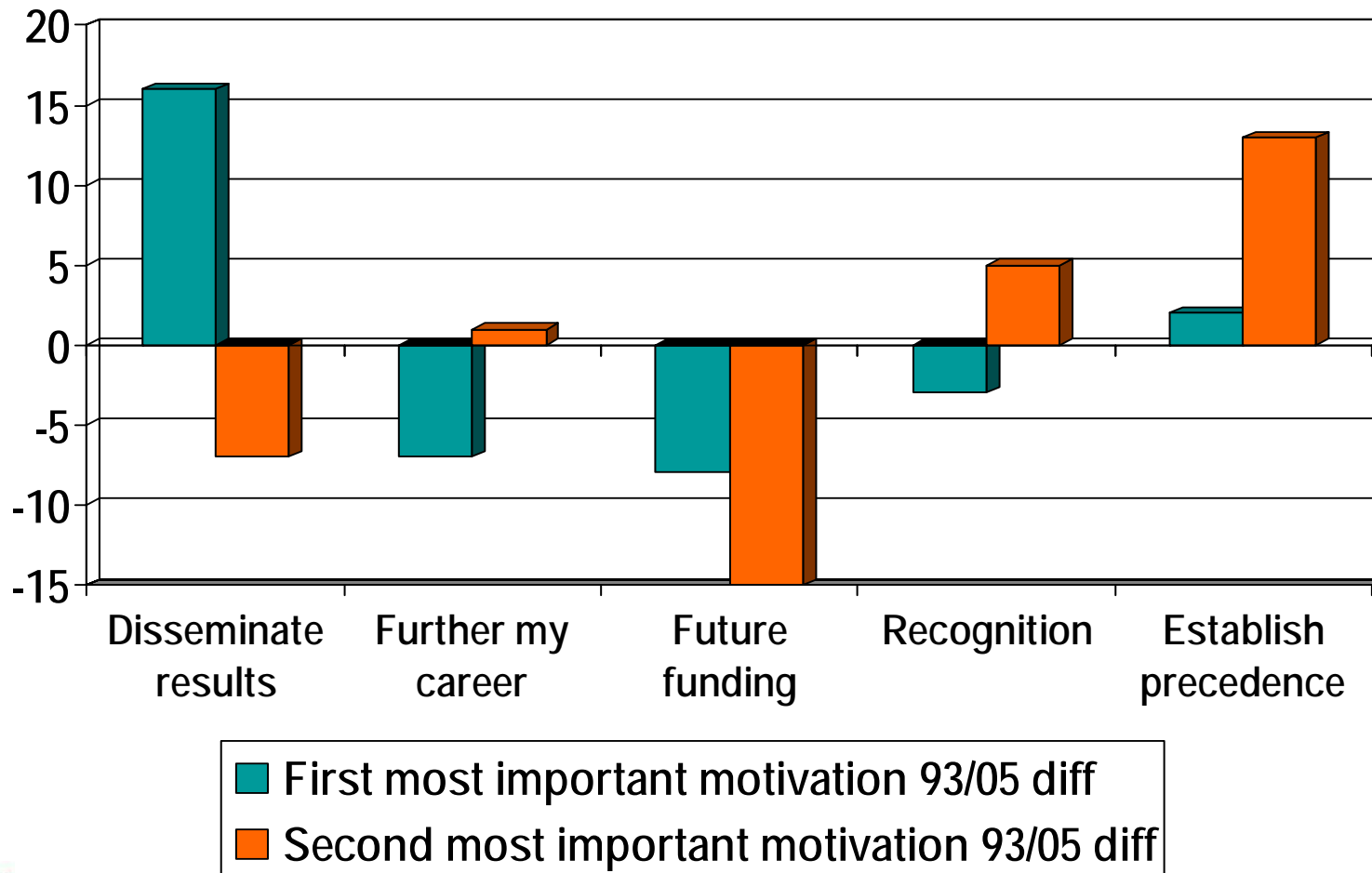
1993. B. R. Coles: "STM Information System in the UK". Royal Society/ ALPSP/ British Lib.

2005. Elsevier/NOP study
 What would you say are the two most important motivations for publishing? Base: (6344)



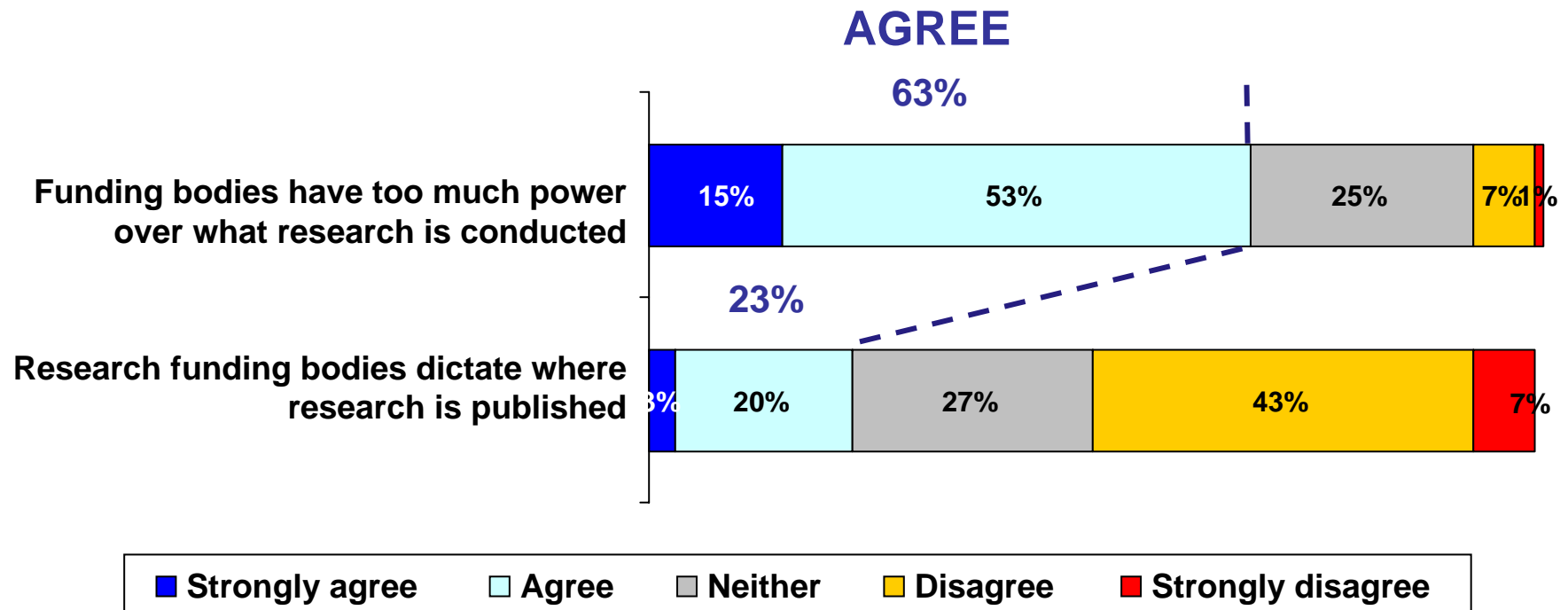
Motivational change over 10 years

- Establishing precedence and gaining recognition are more important than previously



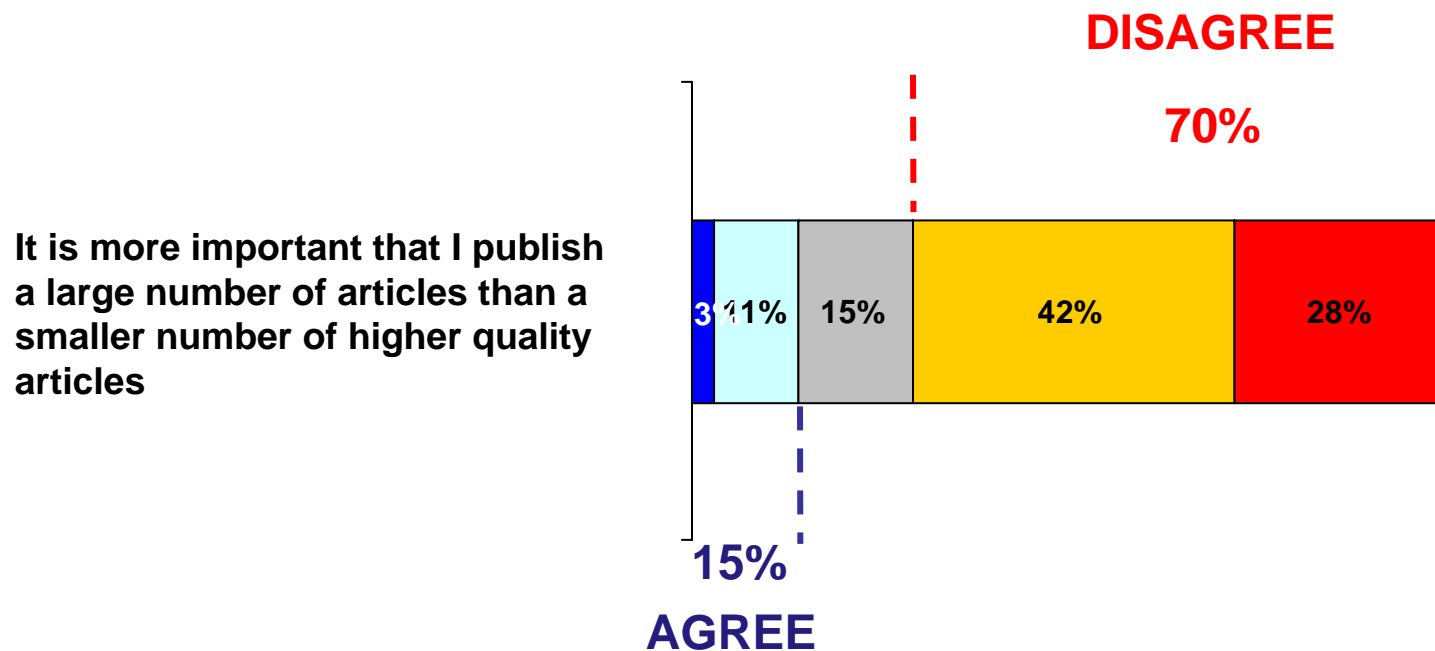
Funding

- Researchers have **ambivalence towards funding bodies**:
 - 63% think they have too much power over what research is conducted
- Despite concerns about the pressure to publish in high impact journals, **funding bodies do not dominate choice of journal**

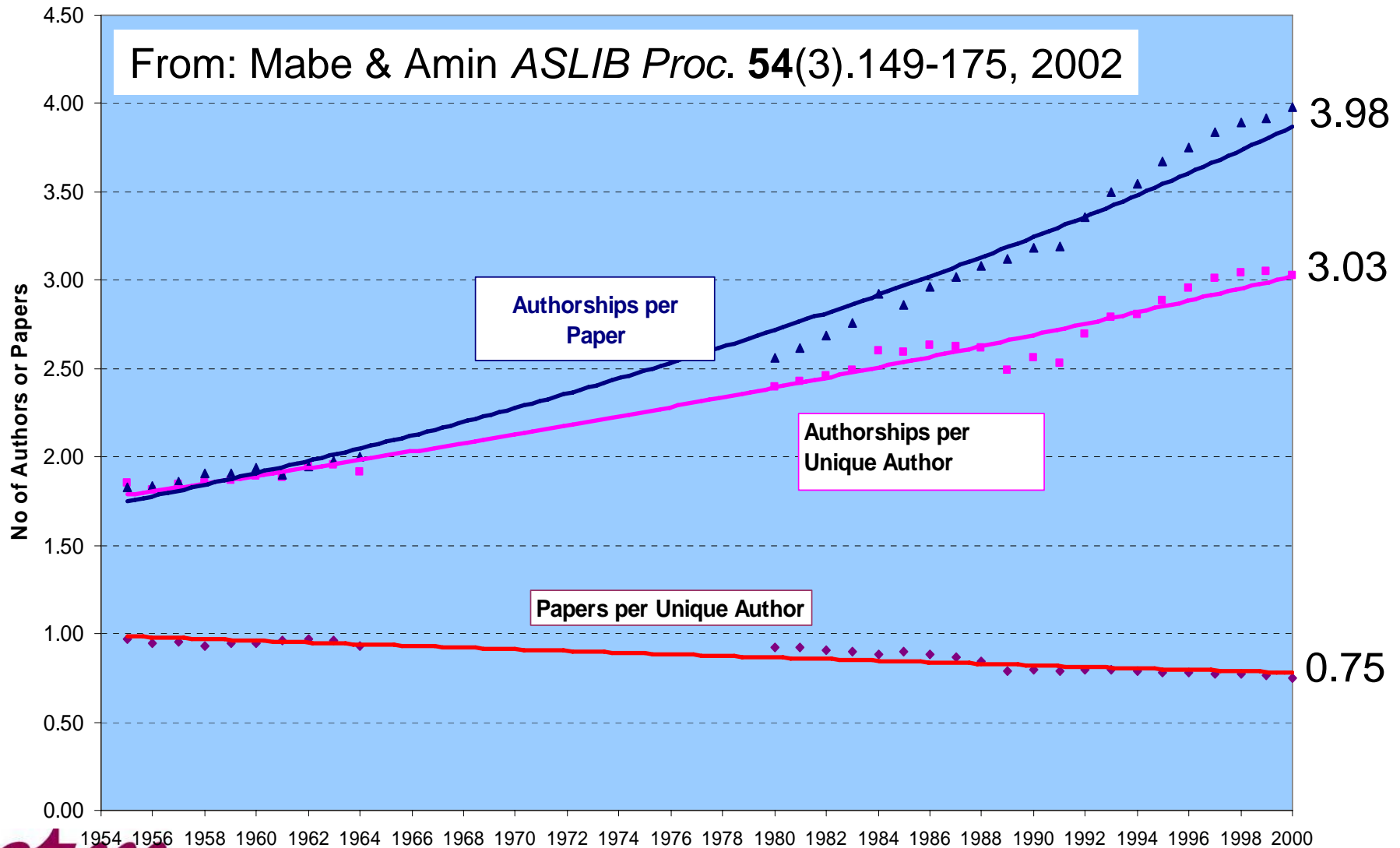


Are too many articles being published?

- Quality is more important than quantity
 - the majority **disagree (70%)** that it is better to publish a **large number of papers**

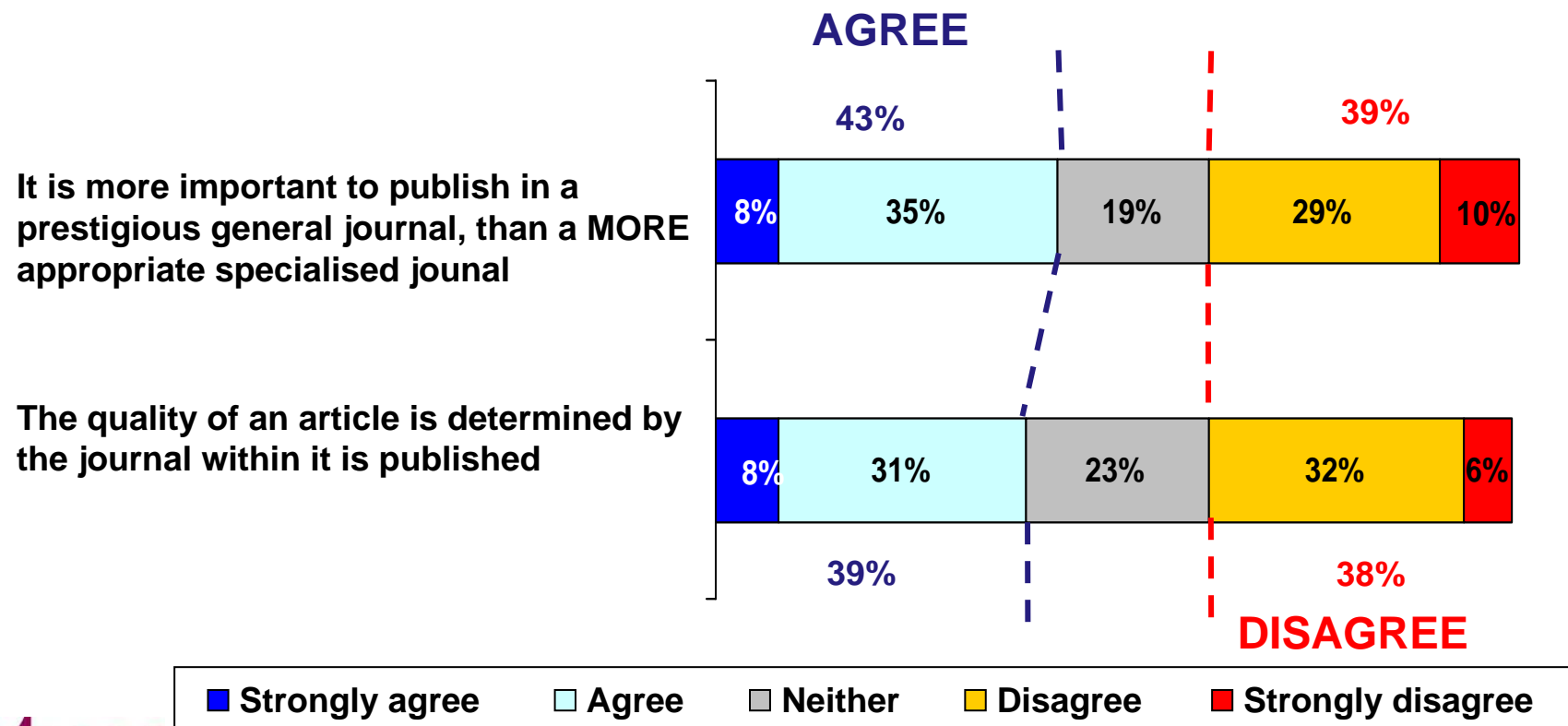


Paper productivity levels



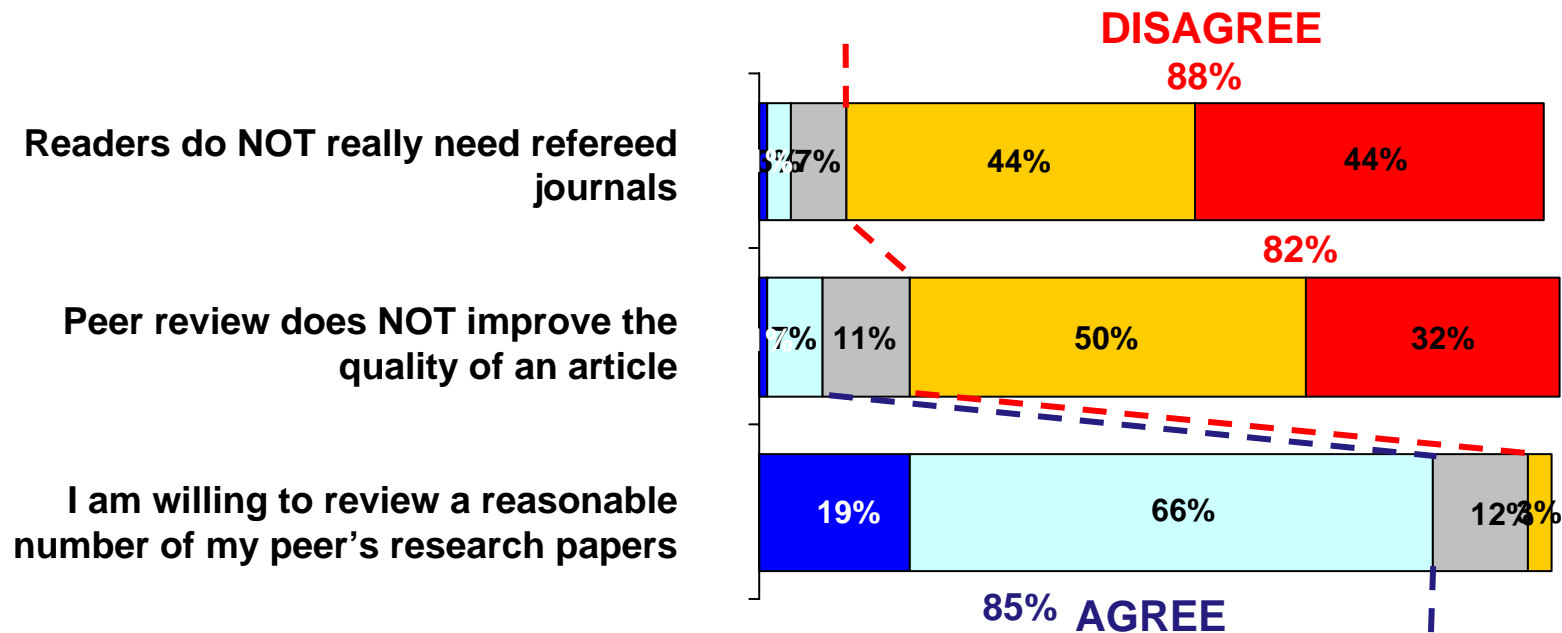
Prestige journals

- Authors are divided when it comes to deciding whether to publish in a prestigious or niche journal
- Readers are also divided when assessing a paper. Significant proportions believe that the quality of the article is NOT determined by the journal



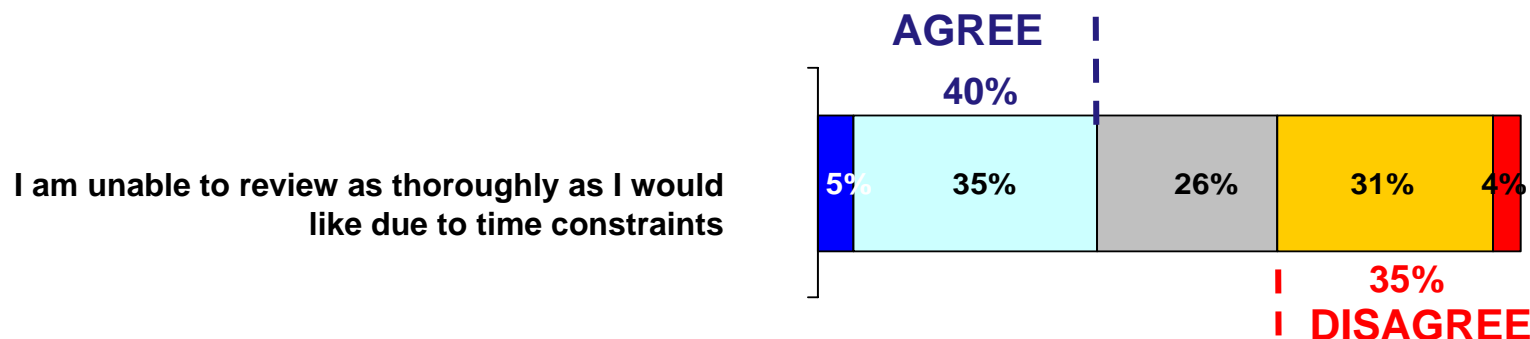
Peer review is important and supported

- **Universal agreement that refereed journals are required**
 - 88% disagree that readers do not need refereed journals, only 4% agree (5% for Physics)
- **Majority believe that peer review improves an article**
 - 82% disagree that peer review does *NOT* improve an article's quality.
 - Engineering and Materials Sciences more sceptical
- **Committed to peer review**
 - 85% are willing to review a reasonable number of their peer's research (ranging from anything between 2 and 30 papers a year)



Constraints on peer review

- **Time is an issue** 40% say they cannot review as thoroughly as they would like due to time constraints
- Alongside time, researchers indicated that **lack of relevance** also makes them less willing to review
- Other reasons are:
 - being asked to review **poor quality articles**
 - reviewed for that journal in the past (**now on CV**)
 - have not reviewed in the past (**no personal relationship**)
 - **less well-known** journals



Freely available white paper on peer review research
“Is peer review in crisis?” by Adrian Mulligan

http://elsevier.com/framework_editors/pdfs/PerspPubl2.pdf

New Proposed Forms of Peer Review

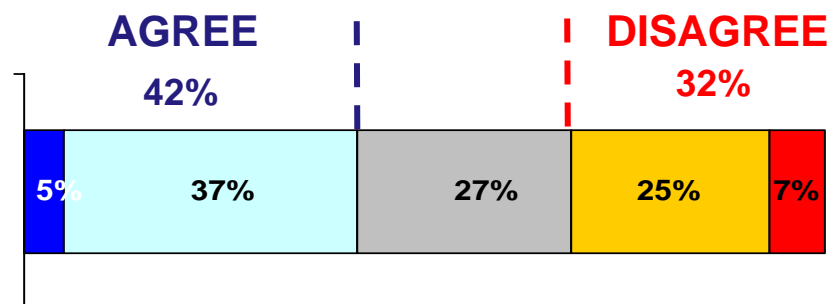
- There is **uncertainty about some proposed peer review practices e.g. continuous review**: 42% agree that it is important, while 32% disagree

If you refer to a paper on the 13th of June then somebody else might have read it on the 15th of June and will think well "Was it the same paper or wasn't it?"
Social Sciences, UK, 46-55, Male

Concerns:

- **Final version should not be altered** needs to be citable
- Should be **limited to qualified people**
- Consistency , authors agree to revise only if the comments were **valuable**
- **Time spent revising work is a concern**

It is important that the published article can be revised in light of comments posted on line by readers (e.g. continuous review)

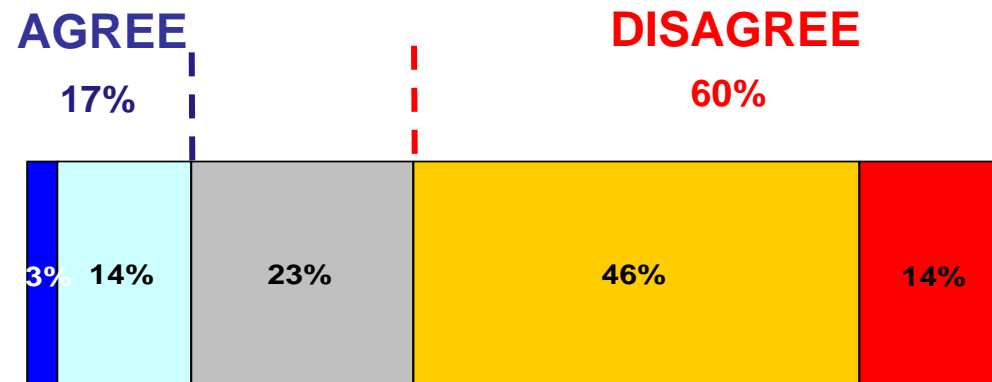


■ Strongly agree ■ Agree ■ Neither ■ Disagree ■ Strongly disagree

Publishers' Role

- 60% believe **publisher adds value**
 - But 17% DON'T, with significantly more thinking so in Computer Science (26%) and Maths (22%)
 - Those who have served on funding panels are more sceptical too (20%)

In the electronic age the publisher adds little value



■ Strongly agree ■ Agree ■ Neither ■ Disagree ■ Strongly disagree

Informal Sources

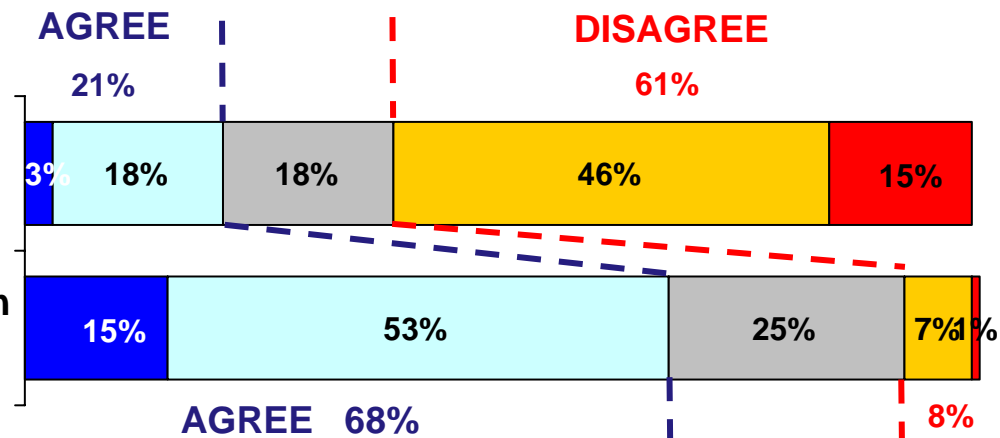
- **Informal channels** such as conferences and bulletin boards **are still important** (just 21% believe they are not important)
 - more favoured by Computer Sci and Physics, less in Earth, Chemistry and Life.
- Those key sources include:
 - **e-mail, meetings/ discussions** with colleagues, **collaborations**

When you sit down with colleagues, that's when you get the main feedback. Medicine, UK, 26-35.

- **Collaboration has increased**, largely facilitated by the adoption of technology. Less in physics (58%).

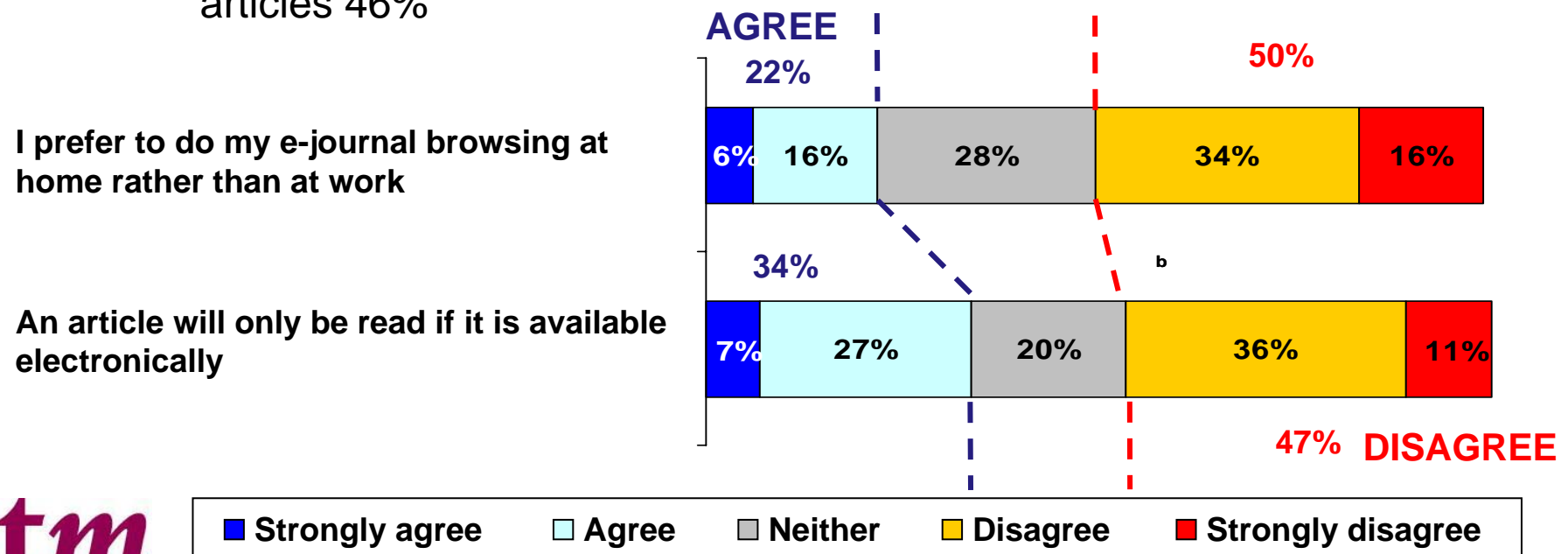
Informal sources of communication such as conferences, bulletin boards are NOT important in scholarly publishing

Researchers are more likely to collaborate on research projects now than they were 10 years ago



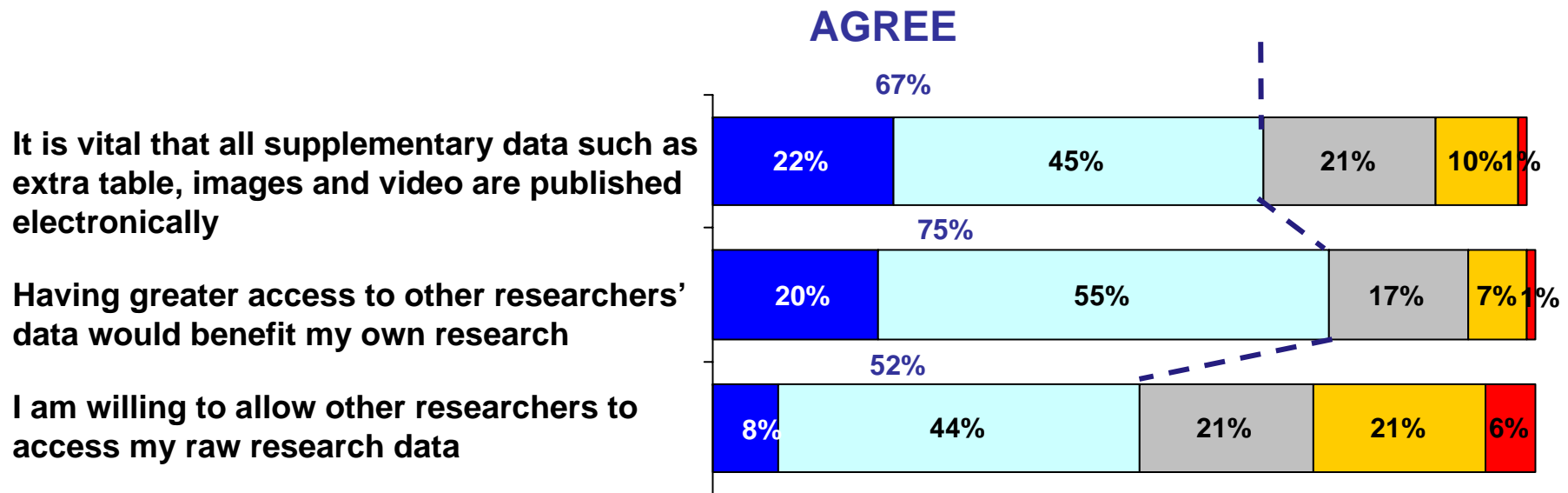
Reading Behaviour

- **Reading patterns** are slowly changing, a significant minority (22%) of respondents prefer to conduct their e-browsing from the comfort of home.
 - Medicine the highest (29%)
- **Electronic versions have not yet taken over** the majority disagree that an article will only be read if available electronically
 - But significant agreement in Computer Science (54%) and large minorities in Life Sciences and Physics & Astronomy (39%)
 - more junior authors are much more likely to depend on electronic articles 46%



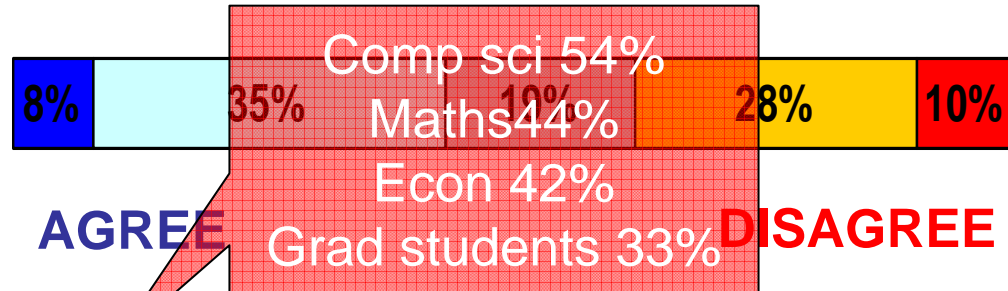
Supplementary data

- Strong agreement that all supplementary data should be published
- Author/reader dichotomy – contradiction when it comes to sharing data
 - Many want **access to others' data** (75%),
 - **fewer are willing to share their own** (52%). Lower for Life Scientists (42%) and Medicine (47%).
- Among the reasons for not sharing are
 - others may **interpret or use it incorrectly**
 - **competition** - capitalise as much as possible on its production

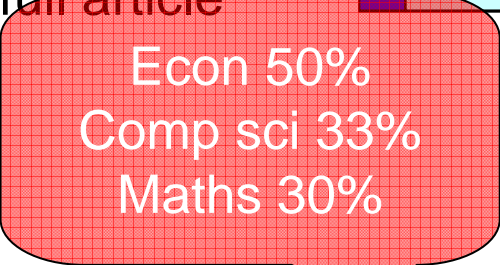


Article Independence

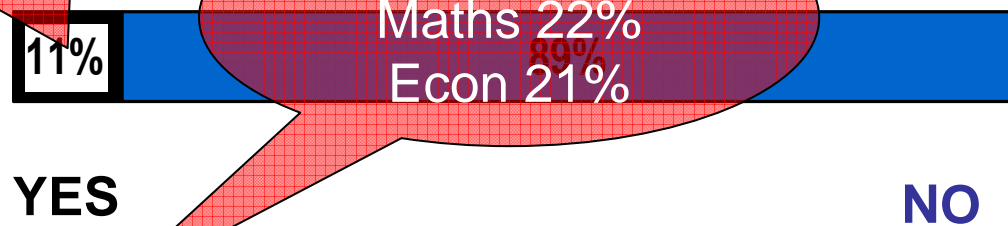
Quality of article depends on journal in which it is published



I always search authors websites for the full article



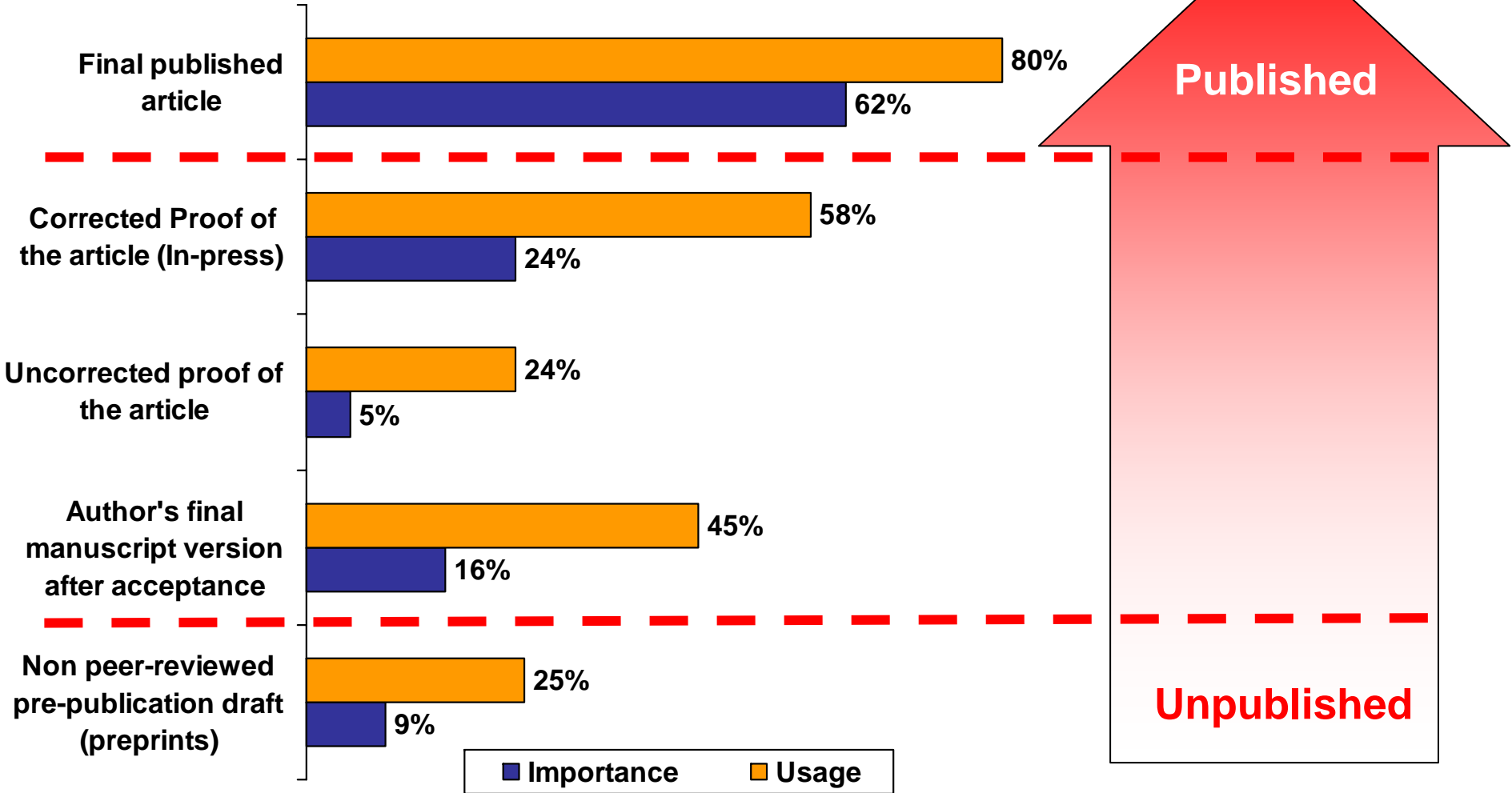
I place an early version on my website



I place a final version on my website



Usage and importance of different versions of an article



Q. 3 A journal article can go through many stages and be available to researchers at different points and in differing locations. Which versions of articles do you use in the course of your research?

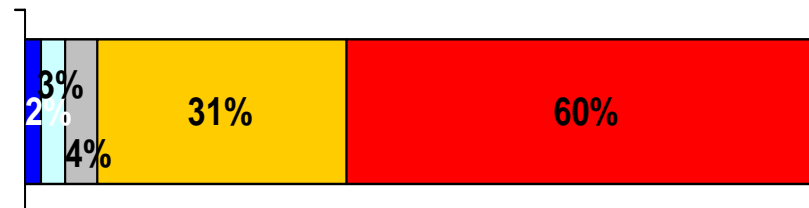
Q. 4a And which do you consider the most important for your research?

Base: (6344)

The permanent record

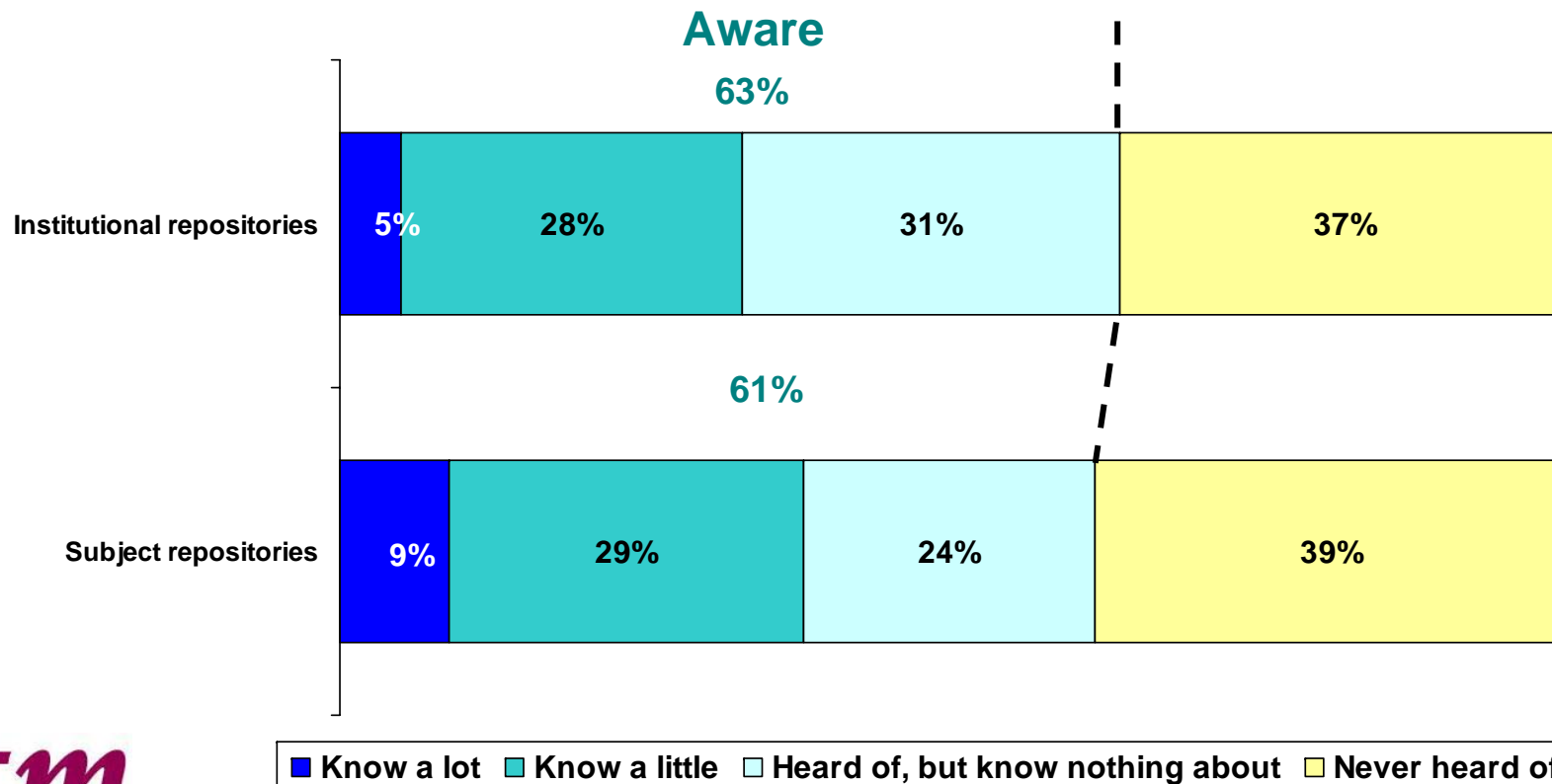
- There is **high demand for articles published more than 10 years ago** and many are referring to papers that are 40 or 50 years old.
 - Particularly strong for Economics, Social Sciences, Earth Sciences, Maths and perhaps surprisingly Physics and Astronomy
- **Older** articles are referred to because:
 - They are **seminal or classic** articles
 - They can provide an **overview** of a subject's development
 - It **avoids repeating** research or allows them to see how ideas have not changed
- However, there are some perceived issues with older papers:
 - **Fields can change** quickly. Access to the archive is a problem for some

It is NOT important to have access to research articles that were published more than 10 years ago



Repositories

- Overall the knowledge of repositories is low
 - Awareness is at 60% for both types of repositories
 - But actual knowledge is low.
 - Just 5% know a lot about institutional repositories (28% a little)
 - More 9%, know a lot about subject repositories (29% a little)



Attitudes to Repositories

- A number see repositories as a good idea:
 - **Free access** to current research
 - Find information more **quickly or easily**
 - Raises the **profile of the institution**

I would be very happy to have my work placed in such a place because I think for the underpinning of science we have to have free exchange of information.

- Despite positive reactions to the idea of repositories, there are a number of **concerns** about radically changing a system that already works for them.

- What would its **purpose** be?

What is the difference with the current database I have access to?

- How would they get **credit**, if their work was published in a repository as opposed to a journal?

The problem is there has to be a way for me to get credit for the work that is done.

- How would it be **funded**?

The big question would be, who is going to fund it, and is it going to be around a while?

- How much **quality control** would there be?

If it hadn't been peer reviewed then just anyone could publish anything.

Concluding thoughts...

- Some **behaviours are changing...**
 - Researchers are making more use of technology
 - 24/7 electronic access
 - Find research and peer review more efficiently
 - Faster availability of research
 - Global collaboration
- ...yet, the **fundamentals remain the same...**
 - Dissemination to mainly colleagues
 - Registration of authors' claims and priority
 - Certification through peer review and where you publish
 - Archival record of definitive, historic, official version of the article in a journal: THE GOLD STANDARD
- ...unless, the mechanisms that drive **researcher motivations change**

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- National Opinion Polls



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