

GPT 4.0 generated

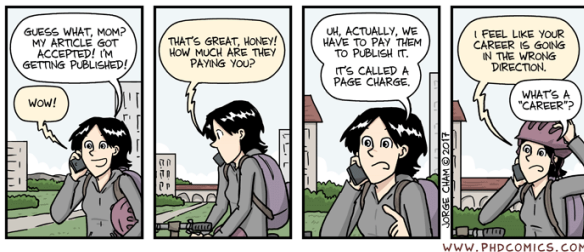
# *Scientific Publishing*

V.A. Yastrebov & M. Montagnat

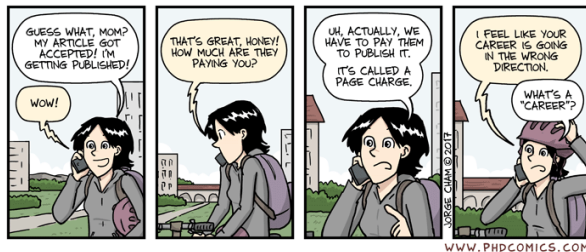
*CNRS, France*  
*JTCAM, Diamond OA*



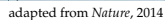
- 1 Publishing landscape
- 2 Survey analysis
- 3 Editors' perspectives



- 1 Publishing landscape
- 2 Survey analysis
- 3 Editors' perspectives



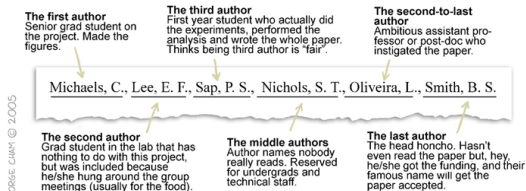
**Objective:** guide the community in navigating today's dynamic and complex publishing landscape



# Question #1: number of papers



## THE AUTHOR LIST: GIVING CREDIT WHERE CREDIT IS DUE.



WWW.PHDCOMICS.COM

## How many papers do you co-sign per year?

$\leq 1$

2-3

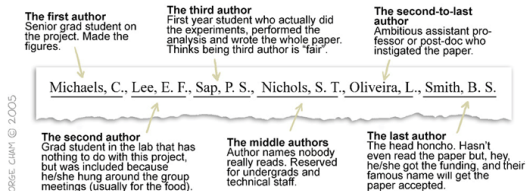
4-6

$> 6$

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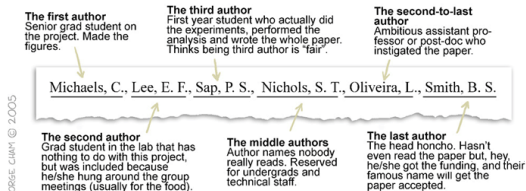
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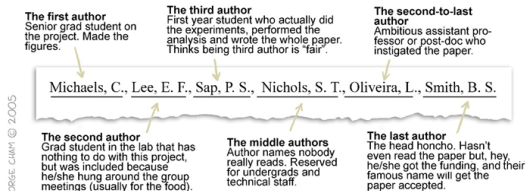
4-6

>6

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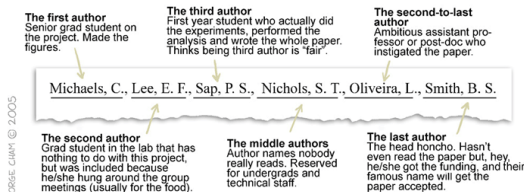
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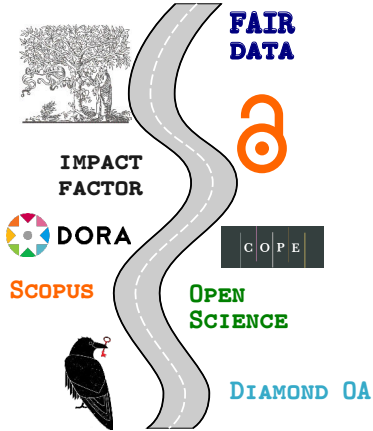
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4-6

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# Scientific Publishing Landscape



## Subscription

- Paywall model
- Often "bundled" subscriptions

## Gold OA

- Open Access
- Predatory danger

## Hybrid

- Subscription + Gold OA

## Diamond OA

- Open Access
- Community-driven



Subscription	Gold OA	Hybrid	Diamond OA
<ul style="list-style-type: none"><li>■ Paywall model</li><li>■ Often "bundled" subscriptions</li></ul>	<ul style="list-style-type: none"><li>■ Open Access</li><li>■ Predatory danger</li></ul>	<ul style="list-style-type: none"><li>■ Subscription + Gold OA</li></ul>	<ul style="list-style-type: none"><li>■ Open Access</li><li>■ Community-driven</li></ul>
Who pays?			
Reader = Institution	Author = PI, Laboratory	Both reader and author	Not reader nor author



Subscription	Gold OA	Hybrid	Diamond OA
<ul style="list-style-type: none"><li>■ Paywall model</li><li>■ Often "bundled" subscriptions</li></ul>	<ul style="list-style-type: none"><li>■ Open Access</li><li>■ Predatory danger</li></ul>	<ul style="list-style-type: none"><li>■ Subscription + Gold OA</li></ul>	<ul style="list-style-type: none"><li>■ Open Access</li><li>■ Community-driven</li></ul>
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Who loses?			
Global South can't read	Global South can't publish	Global South suffers ☹	h-index



Subscription	Gold OA	Hybrid	Diamond OA
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<b>Who loses?</b>			
Global South can't read	Global South can't publish	Global South suffers ☹	h-index
<b>Transformative agreement</b> <ul style="list-style-type: none"> <li>■ Hybrid access under different conditions</li> <li>■ Country-scale consortium</li> </ul>			
<b>Who pays?</b> Institutions (public research budget)			



## Subscription












- MEMOCS 
- JoMMS 

## Gold OA

- AMSES 
- GRL 
- MDPI 
-  frontiers 





...

## Hybrid

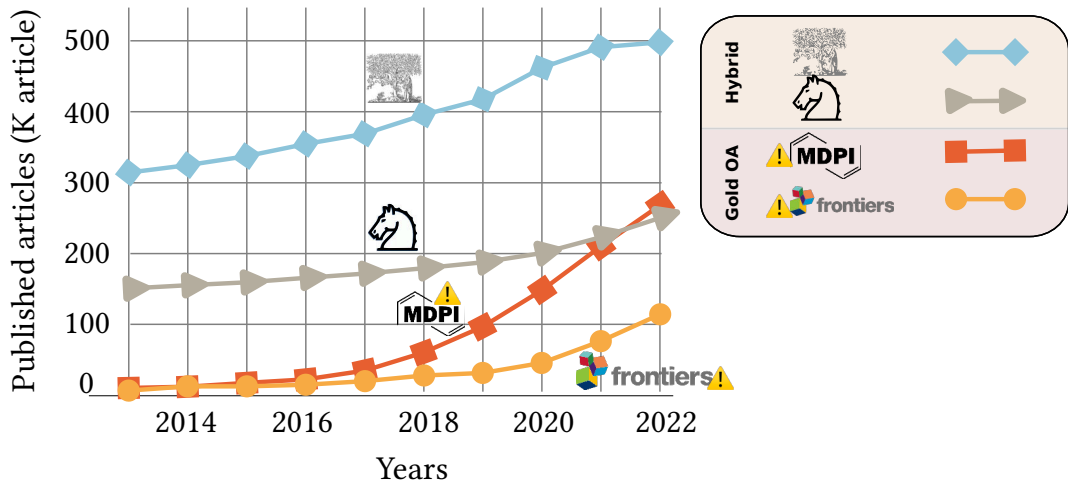
- J App Mech 
- EJM A/Solids 
- JMPS 
- IJSS 
- JSV 
- Acta Materialia 
- CMAME 
- Meccanica 
- Tribol Lett 
- IJNME WILEY
- PRL 
- JGR 

...

## Diamond OA

- CR Mécanique 
- Archives of Mechanics 
- JTCAM 
- SP Physics 














NB: MDPI provides reviewers with 7 days for review

# How much does an OA paper cost?



Journal	Publisher	OA price
■ Nature		€ 10,690
■ CMAME		€ 5,330
■ JMPS		€ 5,064
■ IJSS		€ 4,548
■ PRL		€ 3,660
■ J Mater Sci		€ 3,350
■ GRL		€ 3,240
■ AMSES		€ 1,690
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1 OA paper  
in IJSS



mathematical sciences publishers

**JoMMS**

= 6 years of  
JoMMS  
institutional  
subscription



mathematical sciences publishers

**MEMOCS**

= 23 years of  
MEMOCS  
institutional  
subscription



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■ AMSES		€ 1,690
■ Mech & Indust		€ 1,320
—— Diamond Open Access journals ——		
■ Archives of Mechanics		€ 0
■ CR Mécanique		€ 0
■ JTCAM		€ 0

1 OA paper  
in IJSS



■ mathematical sciences publishers  
**JoMMS**

= 6 years of  
JoMMS  
institutional  
subscription



■ mathematical sciences publishers  
**MEMOCS**

= 23 years of  
MEMOCS  
institutional  
subscription

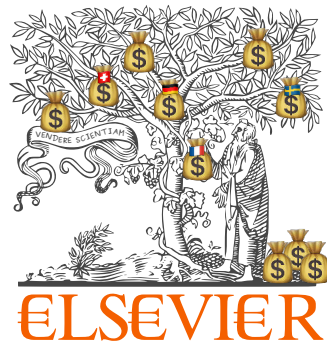


# Transformative agreements



Example of Elsevier “publish OA and read”

Country	Period	Cost (M€/year)
France	2024-2028	33.6 <sup>[1]</sup>
Germany	2023-2028	~ 29.2 <sup>[2]</sup>
Netherlands	2025-2027	16.4 <sup>[3]</sup>
Switzerland	2024-2028	15.7 <sup>[4]</sup>



[1] Couperin agreement, France

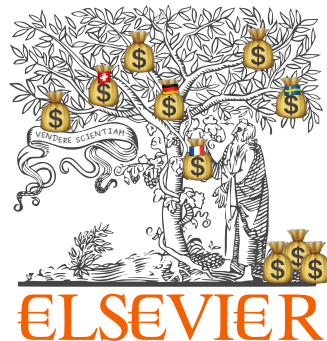
[2] Deal agreement, Finland

[3] ESAC agreement, The Netherlands

[4] SwissUniversities agreement, Switzerland

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Netherlands	2025-2027	16.4 <sup>[3]</sup>
Switzerland	2024-2028	15.7 <sup>[4]</sup>



**Are transformative agreements good for Open Science?**  
Had to be a fair-price OA, is it?

[1] Couperin agreement, France

[2] Deal agreement, Finland

[3] ESAC agreement, The Netherlands

[4] SwissUniversities agreement, Switzerland



**years X-2, X-1**

***N*** papers  
published

**year X**

***C*** citations

**impact factor**

$$\mathbf{IF} = \frac{\mathbf{C}}{\mathbf{N}}$$



years X-2, X-1

$N$  papers  
published


year X

$C$  citations

impact factor

$$IF = \frac{C}{N}$$



Journal Citation Reports (JCR)  
Impact Factor (IF)   
Quartiles (Q1–Q4)

Clarivate - a publicly traded bibliometrics and scientometrics company,  
founded in 2016 (revenue \$ 2.66 billion, 11 600 employees)





years X-2, X-1

$N$  papers  
published


year X

$C$  citations

impact factor

$$IF = \frac{C}{N}$$














Journal Citation Reports (JCR)  
Impact Factor (IF)   
Quartiles (Q1–Q4)

Alternative non-profit free and open database:

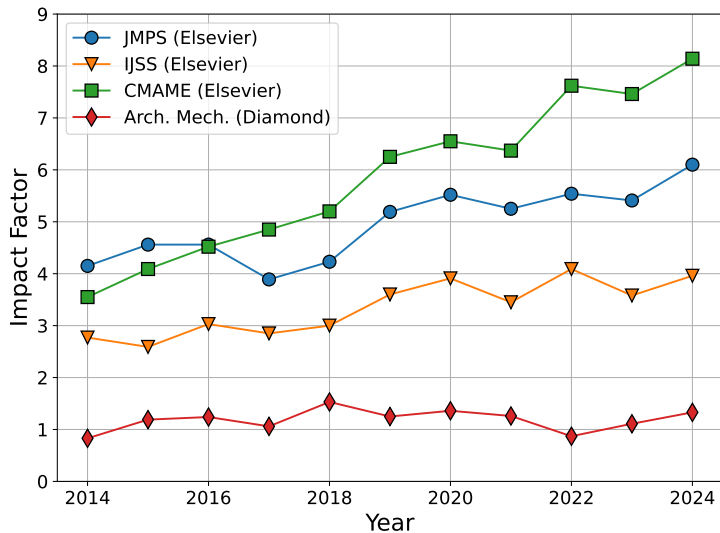


OpenAlex



Journal	Publisher	Impact factor	APC cost
■ IJP		12.8	€ 3,830
■ CMAME		6.9	€ 5,330
■ JMPS		6.0	€ 5,064
■ IJSS		3.9	€ 4,548
■ J Mater Sci		3.5	€ 3,350
■ Meccanica		2.0	€ 3,590
■ AMSES		2.6	€ 1,690
■ Mech & Indust		1.2	€ 1,320
—— Diamond Open Access journals ——			
■ Archives of Mechanics		1.1	€ 0
■ CR Mécanique		1.0	€ 0
■ JTCAM		N/A	€ 0

# Impact Factor evolution





James R. Rice

Professor of Engineering Sciences and Geophysics, Harvard University  
Verified email at [seas.harvard.edu](mailto:seas.harvard.edu) - [Homepage](#)

Solid and Fluid Mechanics Geophysics Fracture Earthquake Science Glaciology

Cited by			<a href="#">VIEW ALL</a>
	All	Since 2020	
Citations	64265	12762	
<b>h-index</b>	<b>94</b>	53	
i10-index	153	109	

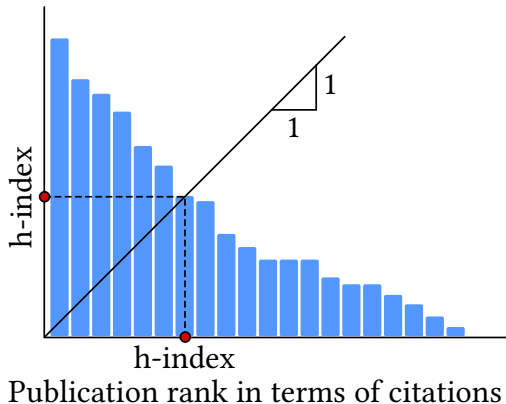
TITLE	CITED BY	YEAR
A path independent integral and the approximate analysis of strain concentration by notches and cracks JR Rice	11909	1968
Conditions for the localization of deformation in pressure-sensitive dilatant materials JR Rice, JR Rice Journal of the Mechanics and Physics of Solids 23 (5), 371-394	3493	1975
Some basic stress diffusion solutions for fluid-saturated elastic porous media with compressible constituents JR Rice, MP Cleary Reviews of Geophysics 14 (2), 227-241	2678	1976
Mathematical analysis in the mechanics of fracture JR Rice Fracture: an advanced treatise 2, 191-311	2620	1969
Inelastic constitutive relations for solids: an internal-variable theory and its application to metal plasticity JR Rice Journal of the Mechanics and Physics of Solids 19 (5), 433-450	2259	1971
Ductile versus brittle behaviour of crystals JR Rice, G Thomson The Philosophical Magazine: A Journal of Theoretical Experimental and ...	2073	1974
Dislocation nucleation from a crack tip: an analysis based on the Peierls concept JR Rice Journal of the Mechanics and Physics of Solids 40 (2), 239-271	1820	1992
Heating and weakening of faults during earthquake slip JR Rice Journal of Geophysical Research: Solid Earth 111 (B9)	1527	2006
On numerically accurate finite element solutions in the fully plastic range JC Nagtegaal, DM Parks, JR Rice Computer methods in applied mechanics and engineering 4 (2), 153-177	1422	1974
Some remarks on elastic crack-tip stress fields JR Rice International Journal of Solids and Structures 9 (B1), 751-758	1408	1972



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Nadek Lepoint Professor of Mechanical Engineering...	>
Xueqian Gao (高学谦) Xinghua Distinguished University...	>
Yajing Liu MIT University	>
Robert C. Viesca Associate Professor, Tufts University...	>
Jian Sheng Wang Retired	>
Paul Segall Professor of Geophysics, Stanford...	>
Eric M. Dunham Professor of Geophysics, Stanford...	>
Rachel Abercrombie Department of Earth & Civil Sciences...	>

Number of citations

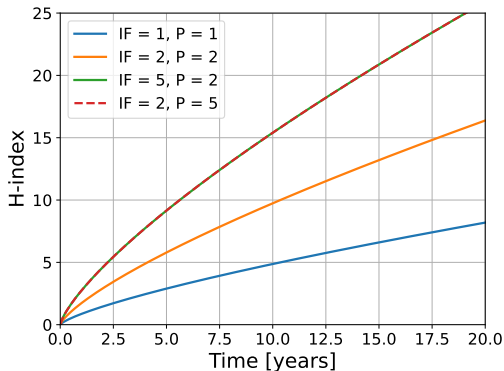


## h-index growth model

$$H(t) \sim \sqrt{IF \cdot P} \, t^\beta$$

$IF$  - average impact factor of journals

$P$  - productivity (papers / year)





## Game Theory and Optimization

### ■ Publishers

$\max_{\text{editors, models, resources}} (\text{impact-factors})$

### ■ Scientists

$\max_{\text{papers, constraints}} (\text{h-index})$

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### Winning the Games Scientists Play

Book | © 1982

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## Game Theory and Optimization

### ■ Publishers

$\max$  (impact-factors)  
editors, models  
resources

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$\max$  (h-index)  
papers  
constraints

SPRINGER NATURE Link

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Home > Book



### Winning the Games Scientists Play

Book | © 1982

1st edition | [View latest edition](#)

*“When a measure becomes a target,  
it ceases to be a good measure.” [1]*

Marilyn Strathern, British anthropologist

[1] Strathern M. ‘Improving ratings’:  
audit in the British University system.  
Eur Rev. (1997) 5(3):305–321 [\[doi\]](#)



## San Francisco Declaration on Research Assessment<sup>1</sup>



Contains a list of recommendations for funding agencies, institutions, researchers, etc.

### Recommendations

- ★ “eliminate the use of journal-based metrics in funding, appointment, and promotion”
- ★ IF of journals in which a scientist publishes  $\neq$  quality of her/his research

---

<sup>1</sup>Initiated by the American Society for Cell Biology in 2012





They have signed SF DORA  
**In total 3446 organizations worldwide**



## The Coalition for Advancing Research Assessment<sup>1</sup>



Contains a list of commitments for funding agencies, institutions, researchers, etc.

### The Commitments (10 points)

- ★ "Abandon inappropriate uses in research assessment of journal- and publication-based metrics, in particular inappropriate uses of Journal Impact Factor (JIF) and h-index"
- ★ "Base research assessment primarily on qualitative evaluation for which peer review is central, supported by responsible use of quantitative indicators"

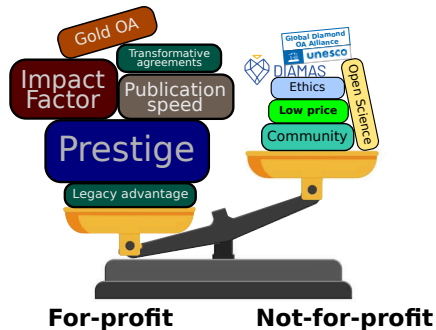
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<sup>1</sup>European Commission's initiative signed in 2022

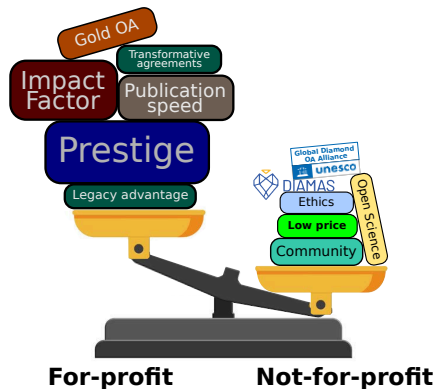


They are engaged in CoARA  
In total 860 large scale organizations worldwide

## Not-for-profit Science chooses for-profit publishers



## Not-for-profit Science chooses not-for-profit publishing?



Community-led subscription-based and Diamond OA initiatives:  
Archives of Mechanics, CR Mécanique, JoMMS, MEMOCS, JTCAM and many others...

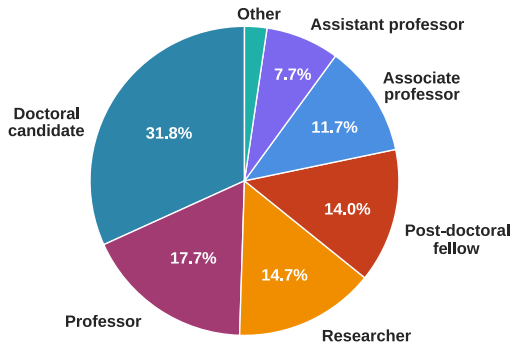


# Survey Analysis

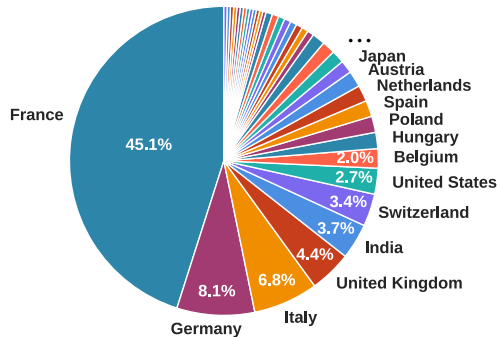
Researchers' Perspectives and Expectations in Scientific Publishing



## What is your position?



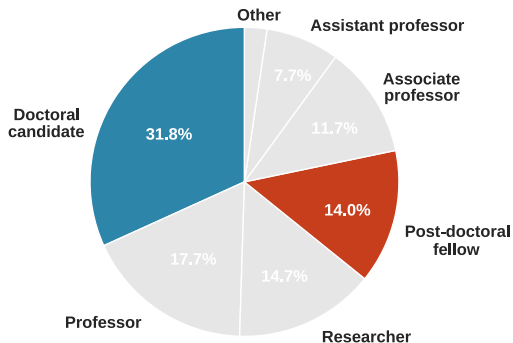
## In which country do you work?



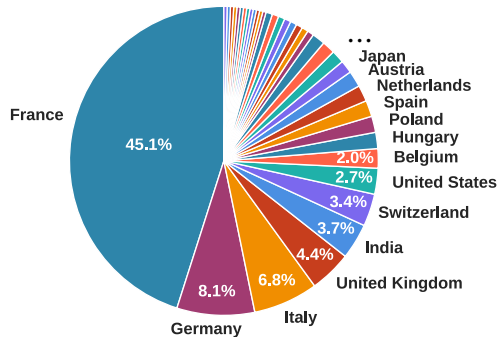
**DATA**  
Collection mode: anonymous Google Form  
Target group: participants of the ESMC 2025  
Number of responses: 299  
Data collection period: 6-30 June, 2025  
DOI: [10.5281/zenodo.15843566](https://doi.org/10.5281/zenodo.15843566)



## What is your position?



## In which country do you work?



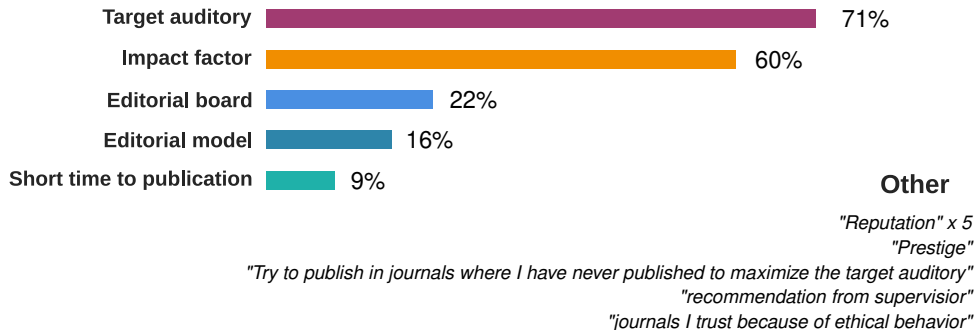
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## On which criteria do you choose a journal to publish an article?

(up to 2 options could be selected)

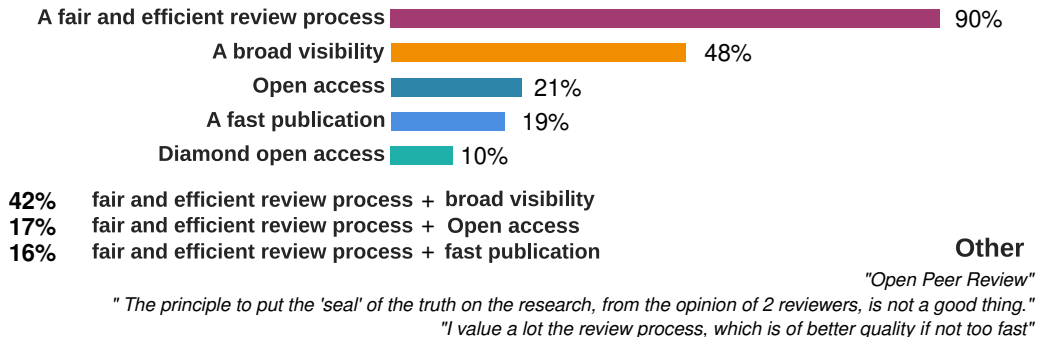


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## As an author what added value do you expect from a journal?

(up to 2 options could be selected)

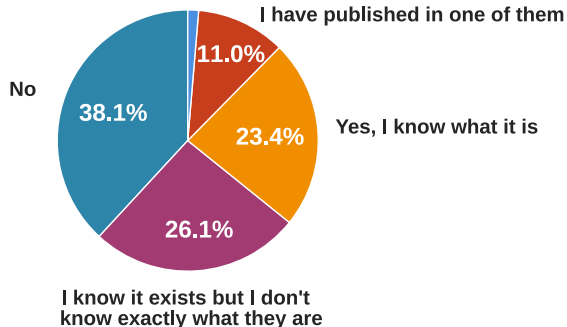


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## Have you heard about Diamond Open Access journals?

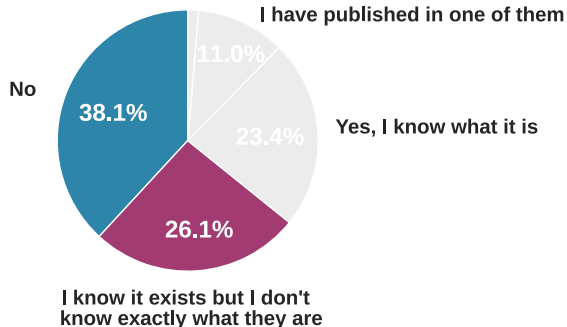


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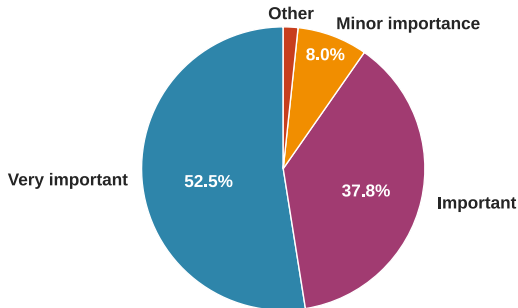


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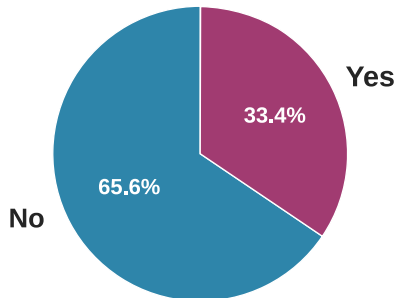
How important is for you the Open Science approach  
(open data, open source, open access)?



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Are you aware about the Transformative Agreements with major publishers?

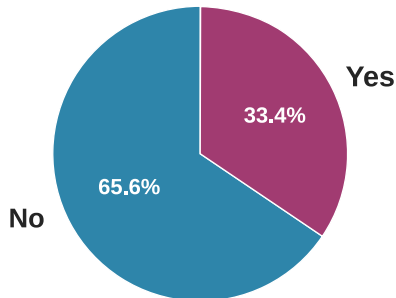


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## Are you aware about the Transformative Agreements with major publishers?



### Idea:

Transition from hybride model to a fair price OA model

### In practice:

France pays to Elsevier as much as in previous contract, but benefits from 10,000 OA publications

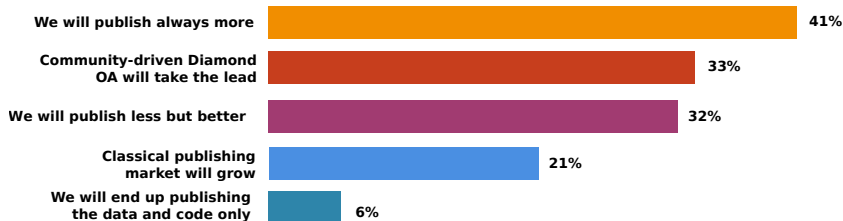
For more information, see [esac-initiative.org](https://esac-initiative.org)



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## How do you envision the future of scientific publishing? (2 options)



### Other

*"I am hoping for less and better paper, in diamond open access journals but I am not very hopeful"*

*"The field is contaminated by the use of publications for career progression purposes rather than for scientific communications"*

*"I hope this publication craziness will cease and that we publish less, but better papers"*

*"We will publish less but better, This is more a dream: we would publish less but better (but this is not the policy in today's major countries)"*



#### DATA

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# Editors' perspectives



## Publishing in Materials Science Editor's Perspective

**David Rodney**

Associate editor, Acta Materialia  
Scripta Materialia



## Publishing in Computational Mechanics Editor's Perspective

**Alexander Popp**

Associate editor, JTCAM  
Diamond OA  
Associate editor, AMSES  
Gold OA



## Publishing in Biomechanics Editor's Perspective

**Anna Pandolfi**

Editor in chief, Meccanica  
Springer

Associate editor  
Mechanics of Soft Materials  
International Journal of Fracture  
Rakenteiden Mekaniikka  
Modeling and Artificial Intelligence in Ophthalmology



## Publishing in Solid Mechanics Editor's Perspective

**Samuel Forest**

Editor-in-Chief, CR Mécanique  
Associate editor, JMPS

In the past: Philosophical Magazine, IJSS



Available soon on YouTube: [ShareScienceV](#)



Samuel Forest, CR Mécanique & JMPS

# What is a good paper?



David Rodney, Acta Materialia



Anna Pandolfi, Meccanica

# Personal motivation to become editor?



Alexander Popp, JTCAM & AMSES

# Open Science and publishing business?



David Rodney, Acta Materialia

Thank you all!

Start with "Why?" 😊