Annual article processing charges for six large scholarly publishers

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Annual APCs

Outline

- →Motivation
- →Open dataset of annual APCs
  - →Data sources and methods
  - →Results
- →Estimates of global APC spend
  - →Research questions
  - →Methods
  - →Results
  - →Limitations
- →Conclusions and outlook

Background

Article Processing Charges (APCs)

- → How much APCs *should* cost
  - → $200 to 1,000 based on publishing costs (Grossmann & Brembs, 2021)
  - → Up to $1,000 (Fair Open Access Alliance)

Background

Article Processing Charges (APCs)

- How much APCs *should* cost
  - $200 to 1,000 based on publishing costs (Grossmann & Brembs, 2021)
  - Up to $1,000 (Fair Open Access Alliance)
- How much APCs *actually* cost
  - Average/median gold APC
    - Journal level
      - $889 (Siler & Frenken, 2020)
      - $958 (Morrison et al., 2021)
      - $1,068 (Simard et al., 2022)
      - $1,977 (Butler et al., 2024)
      - $2,000 (Haustein et al., 2024)
    - Article level
      - $1,800 (Solomon & Björk, 2016)
      - $1,626 (Morrison et al., 2021)
      - $1,989 (Butler et al., 2023)
      - $2,450 (Haustein et al., 2024)
  - Average/median hybrid APC
    - Journal level
      - $3,137 (Butler et al., 2024)
      - $3,230 (Haustein et al., 2024)
    - Article level
      - $3,000 (Solomon & Björk, 2016)
      - $2,600 (OpenAPC, 2022)
      - $2,905 (Butler et al., 2023)
      - $3,600 (Haustein et al., 2024)

Butler, L.-A., Matthias, L., Simard, M.-A., Mongeon, P., & Haustein, S. (2023). The oligopoly's shift to open access: How the big five academic publishers profit from article processing charges. *Quantitative Science Studies*, *4*(4), 778–799. https://doi.org/10.1162/qss_a_00272
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Background

Motivation

→Lack of transparency around the payment of APCs

→Need for reliable data to support evidence-based decision-making

→Unsustainability of the author-pays model

→Resources intended to support research are leaving academia to maximize shareholder profits

"If you end up paying [APCs], then you're losing funds for other things, like laboratory chemicals," says Kowaltowski, who this year received a L'Oréal-UNESCO For Women in Science International Award for her research. And she wasn't eager to tap her monthly paycheck of about $3500 after taxes."

Brainard, J. (2024). Is the pay-to-publish model for open access pricing scientists out? Science. https://doi.org/10.1126/science.zp80ua9

Annual APC dataset for six scholarly publishers (2019-2023)

Annual APCs

Building the open dataset

APC list prices from

→*annual pricelists*

→*scraped from journal web pages*

Collated into dataset

→*manual and automated methods used to combine files*

→*process of data cleaning and metadata enrichment*

Publisher	OA status	Number of journal-year combinations	APC in USD		
			Min	Max	Average
all publishers		36,618	0	11,690	2,859
	Gold	8,499	0	8,900	1,977
	Hybrid	26,993	0	11,690	3,137
	No OA status provided	16	1,250	3,400	2,288
	No APC provided	1,110		*n/a*	
Elsevier		12,478	150	10,100	2,736
	Gold	2,515	200	8,900	1,891
	Hybrid	9,582	150	10,100	2,959
	No OA status provided	16	1,250	3,400	2,288
	No APC provided	365		*n/a*	
Frontiers	Gold	618	0	3,295	2,093
MDPI		1,676	0	2,895	1,383
	Gold	1,676	0	2,895	1,383
	No APC provided	32		*n/a*	
PLOS	Gold	50	1,595	6,300	2,740
Springer Nature		13,422	0	11,690	3,041
	Gold	2,312	0	6,850	2,348
	Hybrid	10,398	0	11,690	3,195
	No APC provided	712		*n/a*	
Wiley		8,374	0	6,100	3,106
	Gold	1,360	0	5,740	2,139
	Hybrid	7,013	950	6,100	3,294
	No APC provided	1		*n/a*	

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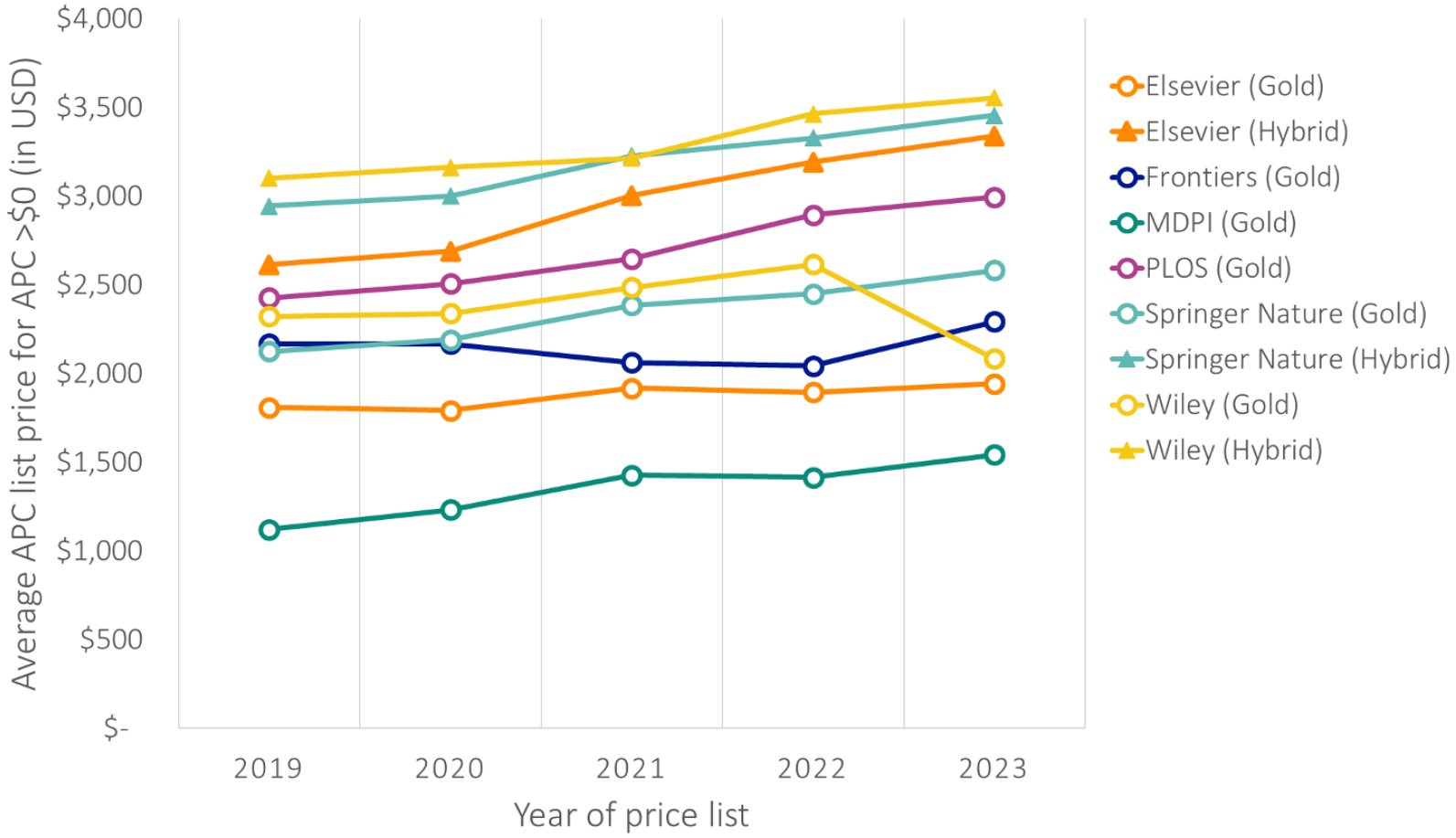
Annual APCs

Open dataset

Average gold and hybrid APC prices per publisher



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Annual APCs

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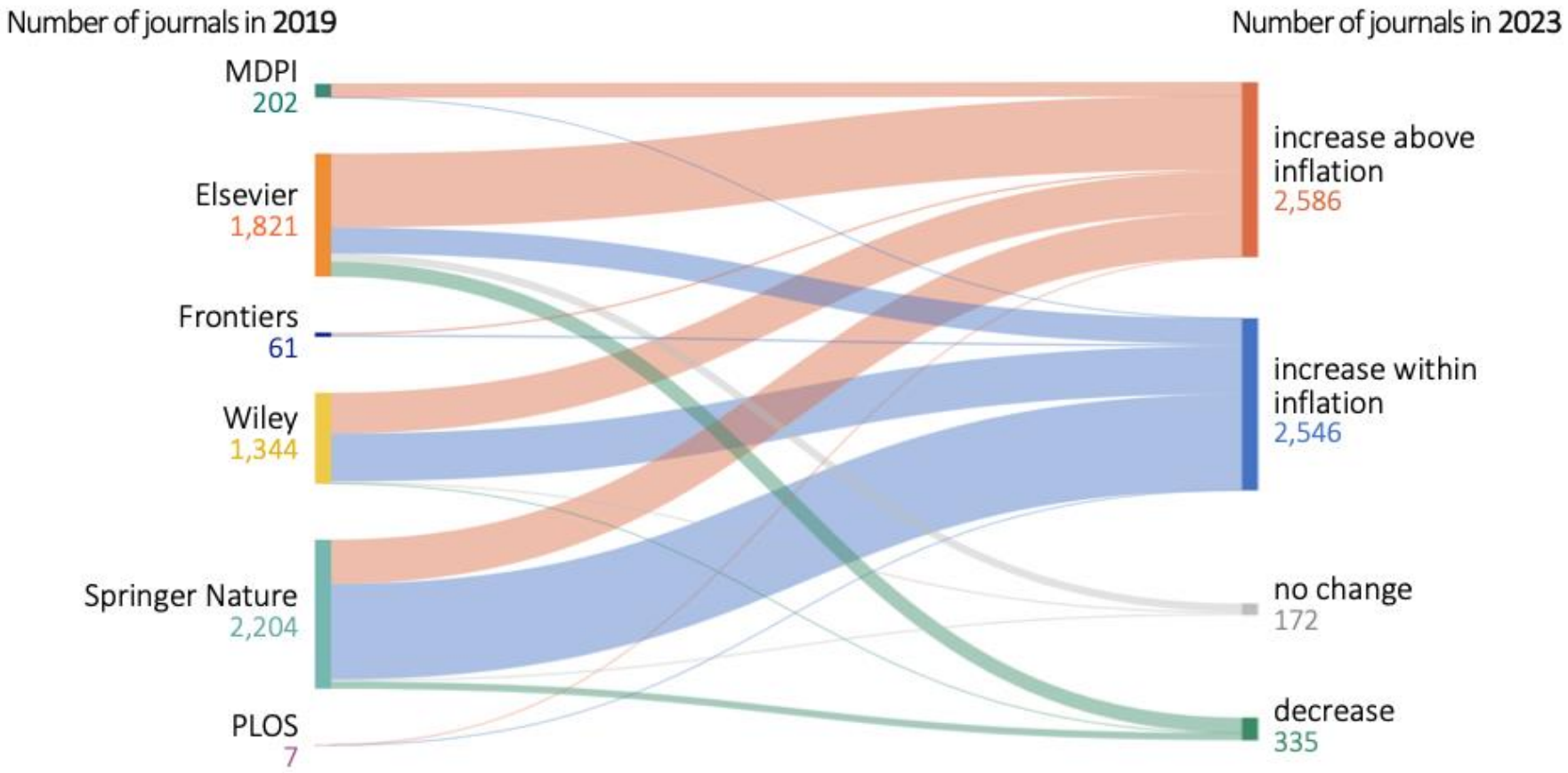

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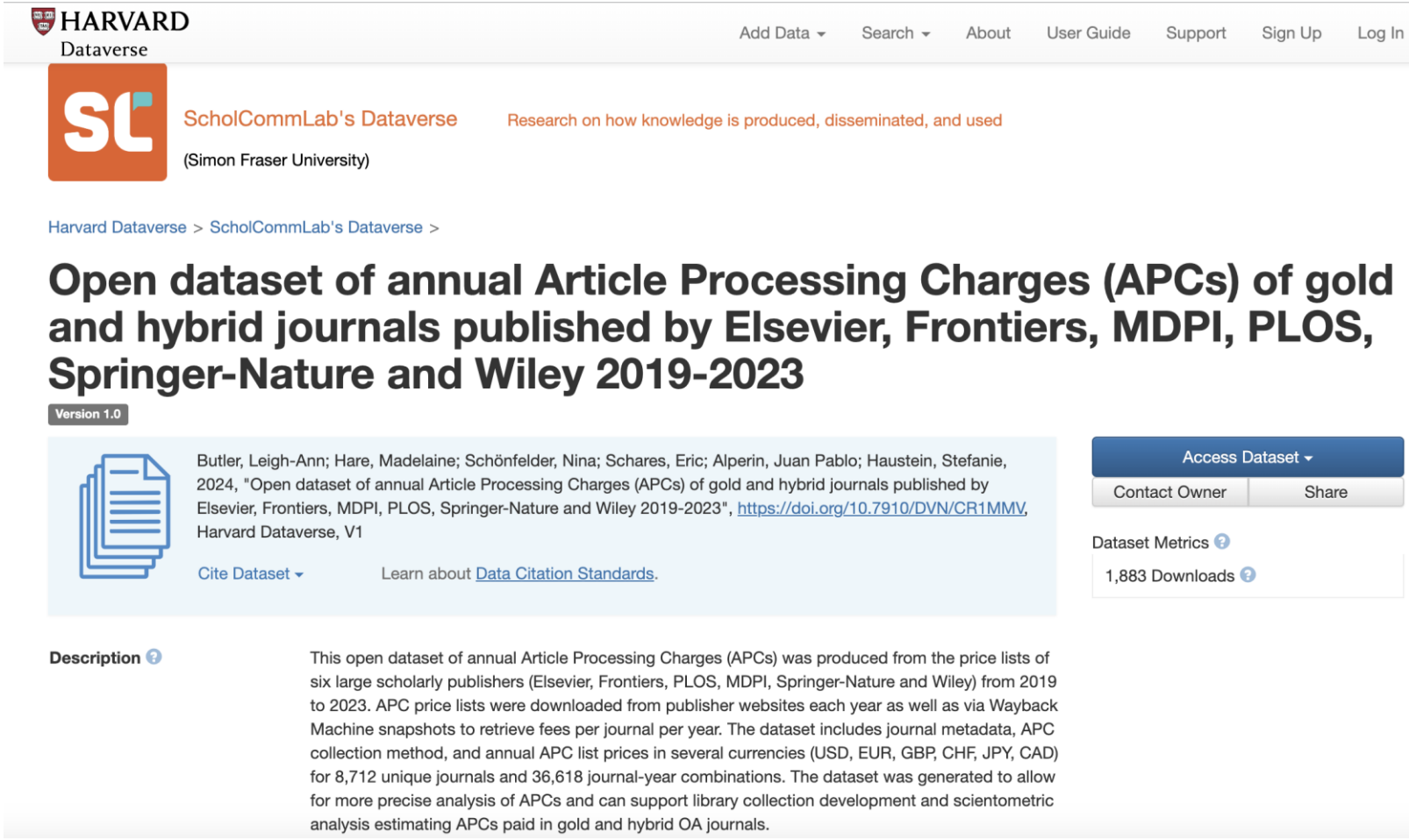

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Estimating global APC expenditure

Estimating global APC expenditure

Research Questions

→How much was paid in APCs to these six publishers for the 2019–2023 period?

→How did the estimated spend differ between gold and hybrid OA?

→How did the estimated spend differ between publishers?

→How did the estimated spend develop over time?

→How do gold and hybrid APCs paid (article level) compare to the APCs listed (journal level)?

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Estimating global APC expenditure

Methods

→Number of “APC-able” papers per journal per year 2019-2023

→Data from OpenAlex

→Comparisons to Dimensions and Web of Science

→Determining hybrid and gold OA paper

→Gold: all “APC-able” papers in a journal

→Hybrid: those with a CC-BY license (excluding delayed OA)
OpenAlex/Unpaywall improved OA status based on our feedback

→Estimating spent based on number of papers per journal per year with respective annual APC, adjusted for inflation to 2023 USD

→Considering 100% waivers in list price, but no individual waivers

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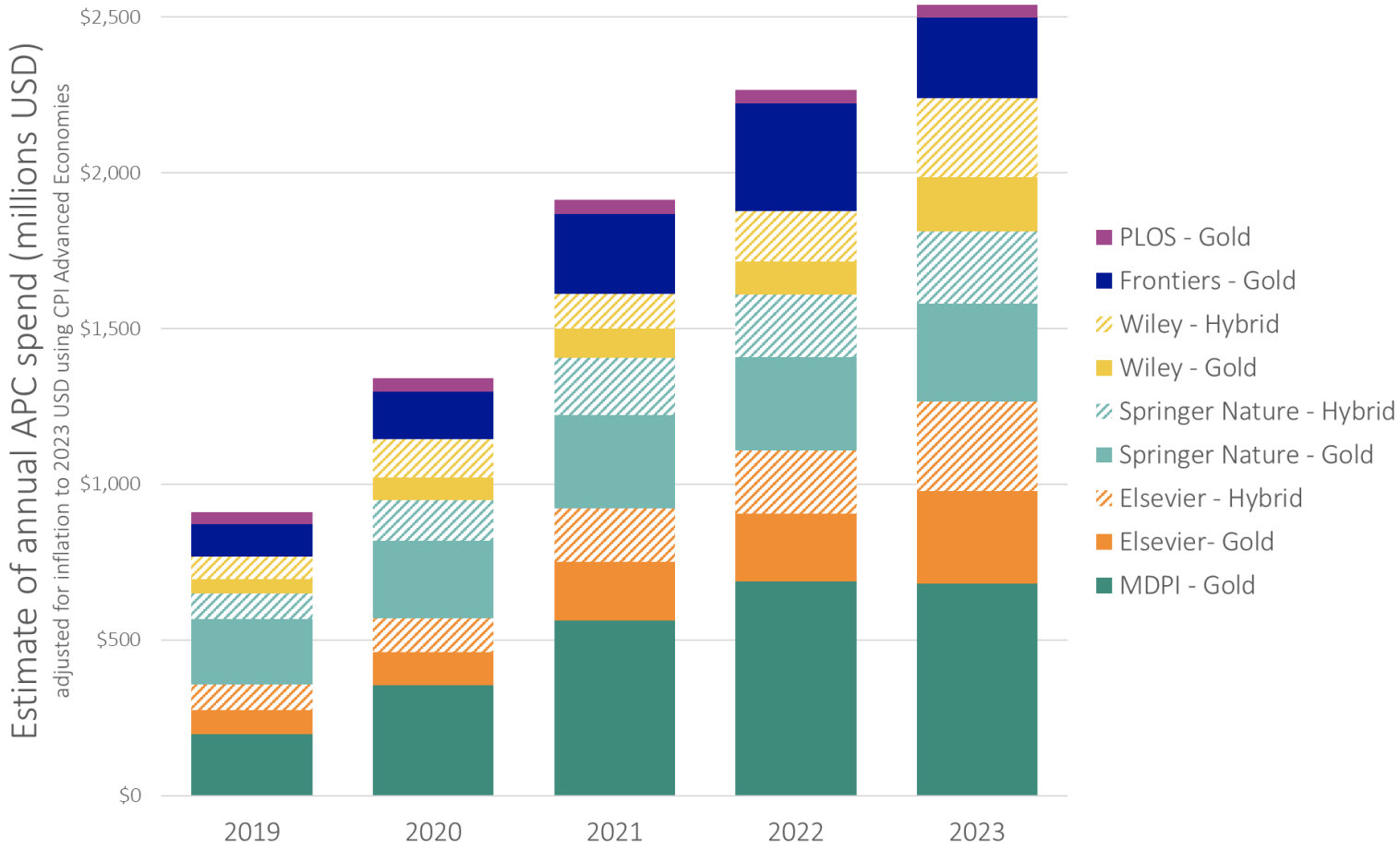
Estimating global APC expenditure

Results



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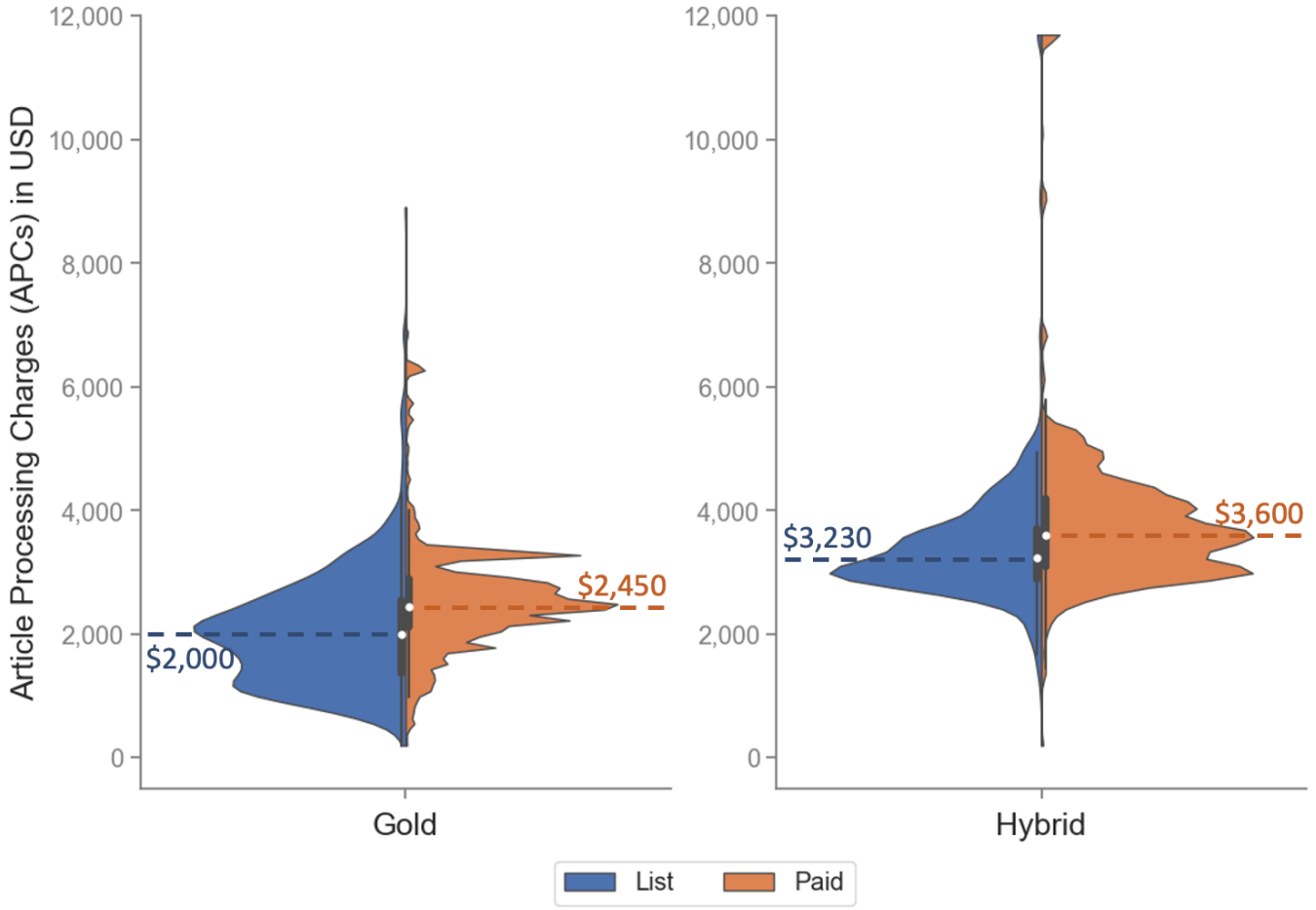
2023 listed vs paid



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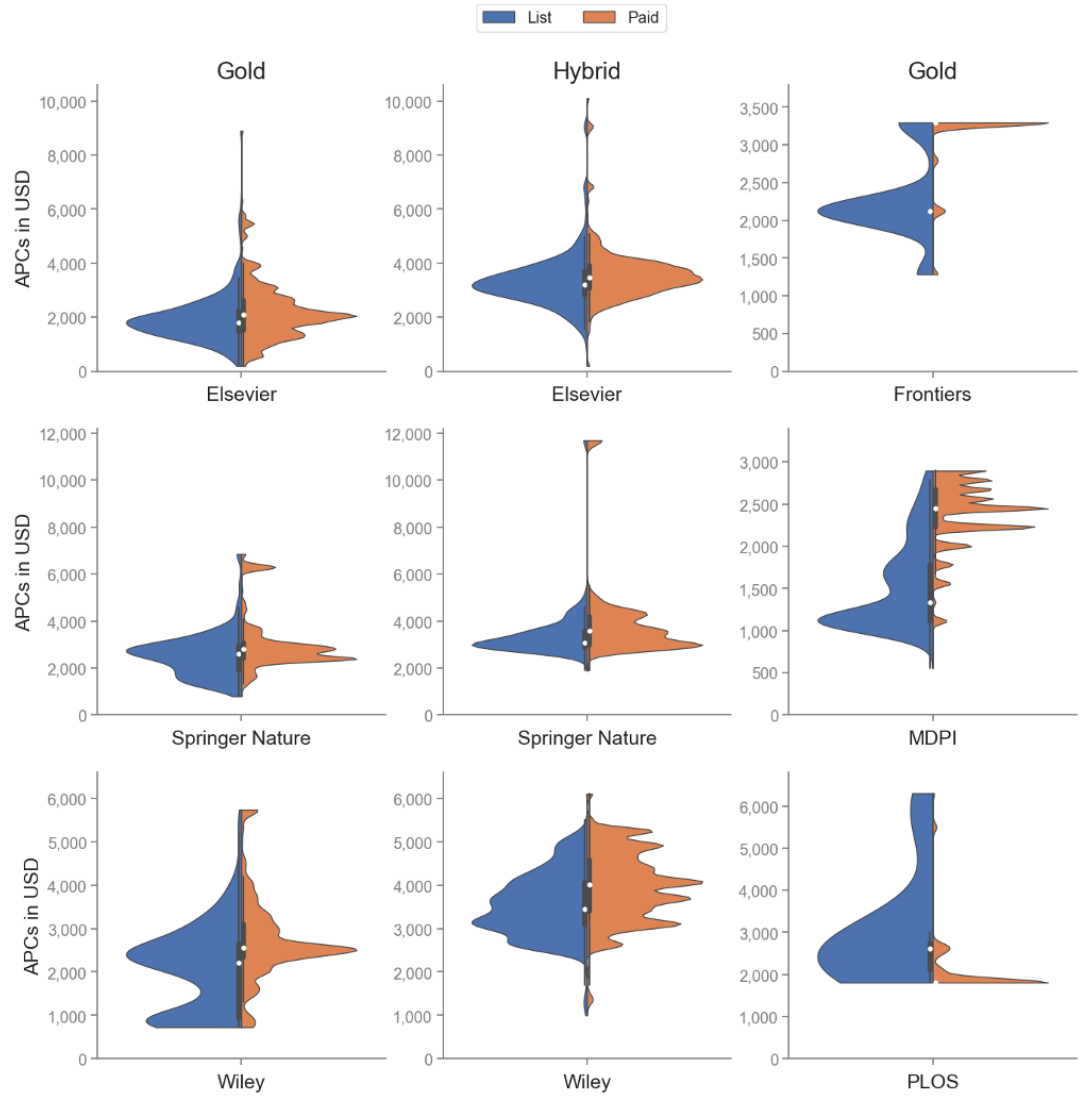
2023 listed vs paid



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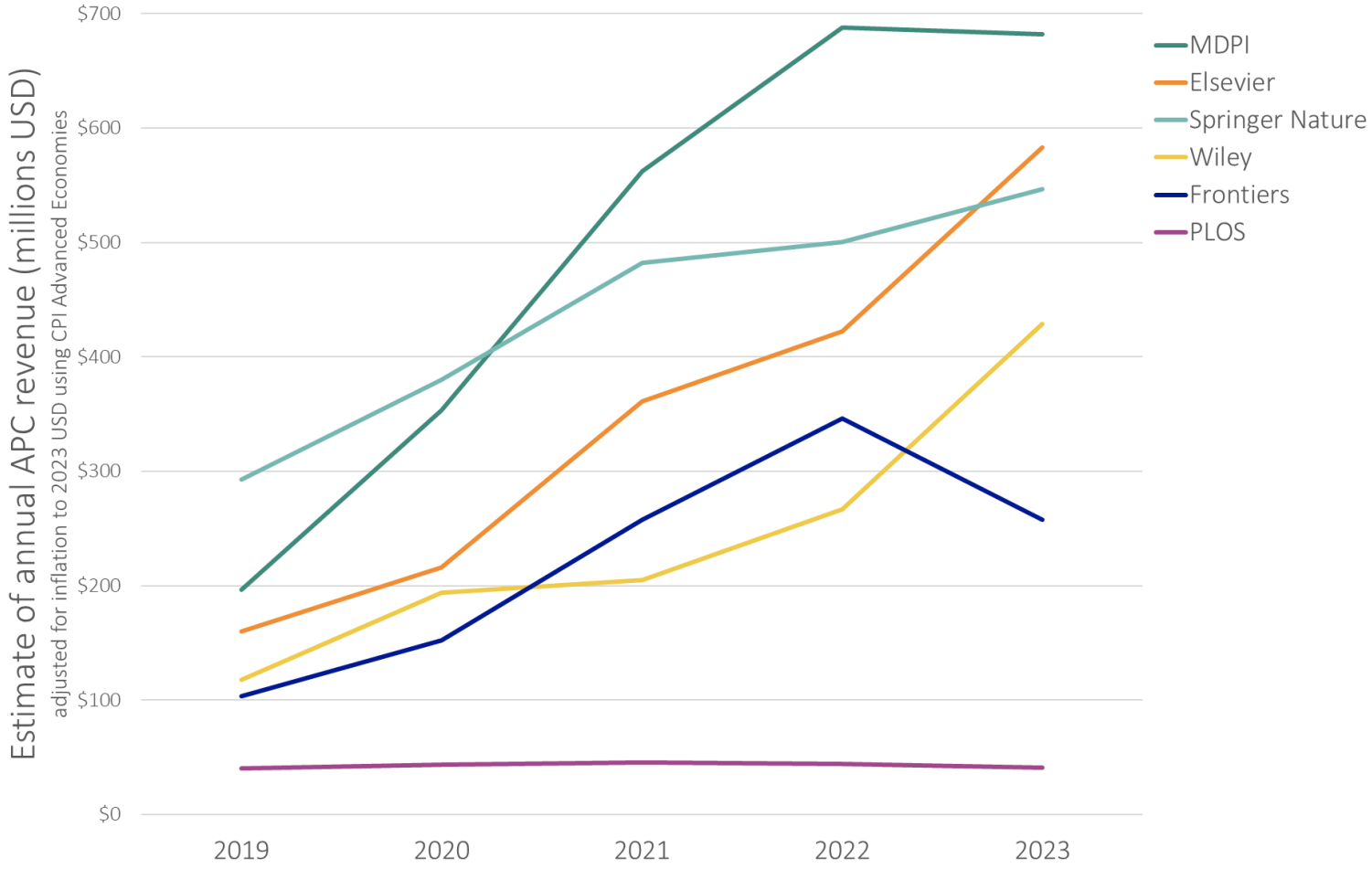

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Estimating global APC expenditure

Limitations

→Dataset collates information provided by publishers

→Results are an estimate due to a lack of transparency around APCs

→Do not consider individual and institutional discounts and waivers due to limits in publicly accessible information

→Do not consider read-and-publish agreements

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Conclusions

Conclusions

Conclusions and outlook

→ Global estimates of APC expenditure, using the dataset, shows us that:
- → a massive amount of money is spent on APCs
- → APC expenditure is growing at an unsustainable rate
- → there is a disconnect between APC pricing and the cost to publish

→ The APC dataset can provide various types of analyses:
- → estimating APC spend
- → supporting collections development
- → understanding costs and value of read-and-publish agreements

→ Continuing to build the APC dataset by:
- → supplementing missing APC data
- → verifying journal OA status
- → expanding dataset to include APCs from additional publishers with a larger timeframe

→ Expanding analysis
- → including author affiliations and countries to understand who pays
- → In-depth analysis by journal

Thank you

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