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One Serial Identifier Can Carry Two Publishing Countries

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Abstract

A country attached to a serial may describe the journal’s place of publication or its publisher’s location. We ask how those definitions affect inventories built from matching ISSNs. We linked 242 journals represented by 424 sampled PubMed citations to the Directory of Open Access Journals using exact ISSNs. The two country strings agreed on 120 journals. Harmonizing three observed naming and geographic conventions raised agreement to 209, leaving 33 journals with different country assignments. The difference was concentrated in less frequently sampled journals, so 42 of 424 citation records inherited different assignments, compared with 33 of 242 journals. On the same fixed set, the United Kingdom accounted for 90 journals under the PubMed field and 105 under the directory field. The country definition and unit of counting both affected the resulting inventory.

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1. Why a journal-country inventory needs a field definition

A library can fill a table of publication venues with exact identifiers, then join a country dimension to describe the journals in its holdings. The output appears straightforward until the person building the table has to choose among a catalog's place of publication, a publishing organization's registration location, or the country associated with a journal's partner organization. A publishing operation can span locations. A single source can also describe a country at more than one geographic level. A field called country can hide both choices. An exact serial identifier avoids confusing two journals with similar names. It does not tell a user which country role the field represents.

The public sources examined here make the roles explicit. The National Library of Medicine (2025a) defines the country element within PubMed's supplemental journal metadata as the journal's place of publication. The Directory of Open Access Journals (2023) asks about the country in which the named publisher conducts business and is registered. That directory records other organizations in a separate part of its journal metadata. A publisher name, a separate organizational partner and a place of publication can each have an informative geography. Insisting that they occupy a single country category is an additional decision made by whoever builds an inventory.

The issue appears concretely in the public bibliographic record of Yi et al. (2024), DOI 10.1016/j.esmoop.2024.102239. PubMed identifies its ESMO Open serial as 2059-7029, gives England as place of publication, and supplies the same ISSN as its electronic and linking identifier. The matching DOAJ journal lists the United Kingdom for its publisher and Switzerland in its secondary-organization country field. At a sovereign-state scale, the two primary fields agree after harmonization. The third value documents a separate association. This record is an illustration outside the comparison sample. It shows why an apparent disagreement between England and the United Kingdom belongs to a different category from a comparison that substitutes the country of another organization.

We ask three empirical questions. For the same exact serials, how many country labels agree as strings and how many differences survive a declared geographic crosswalk? How does moving from one vote per journal to one vote per sampled citation change apparent agreement and country shares? When the two primary country labels disagree, how often is another organization country listed in the directory and does it ever match the PubMed place label? The last question measures information present in both services and does not infer any commercial or editorial relationship beyond the fields reported.

2. Country roles in a distributed publishing system

Research on journal publishing has shown why titles and articles can produce different views of the same system. Solomon (2013) classifies open access publishers by the journals and articles they account for. Larivière et al. (2015) use publication data to document the concentration of scholarly publishing across organizations, while Björk and Solomon (2012) compare open access and subscription journals within a citation-based design. These studies show that an inventory's unit is substantive. A journal inventory allocates one observation to each serial. An inventory of record exposure gives more influence to journals that supply more records in the examined window. Moving between the two can change a summary even when the underlying assignments and citations are identical.

The organizations involved in publishing also vary within national settings. Nazarovets (2026) maps university journals and examines how they are represented across bibliographic sources. Kulczycki et al. (2026) compare journal publishing landscapes across several European and Latin American countries and distinguish country of publication from affiliation geography. Arasteh and Blake (2024) describe how European institutional publishing services involve different kinds of organizations. Simard et al. (2025) measure differences in the geographic and linguistic coverage of open access journals across indexes. Those studies address coverage and how publishers or journals are classified. The present analysis fixes the journal identity first and observes which country shifts while the underlying linked set remains the same.

Metadata systems can privilege different geographic roles. OpenAlex (n.d.) defines a source's country as its home country, typically the publisher's. The National Information Standards Organization (2026) describes how responsibilities may pass between organizations when a journal transfers, providing another reason to distinguish place and publishing responsibility. This study does not reconstruct ownership or title transfers. It compares the publication-place value reported on PubMed citations to a publisher country from a later DOAJ journal export. Current values can describe real organizational differences, or they can reflect different maintenance schedules and cataloging conventions. Collection date and journal identity make those possibilities auditable without determining which mechanism applies to a particular disagreement.

3. Data and design

3.1. Creating a documented citation frame

The citation frame was drawn from three Tuesday publication-date searches in PubMed, 13 February, 11 June and 8 October 2024. The dates define three opportunities for short windows to contribute records. They do not represent a probability sample of publication weekdays or years. We used the publication-date search's returned identifiers as the frame and verified the complete hit count on each date. For each day we sorted the PubMed IDs by SHA-256 with a fixed namespace string and selected the first 360. The example article was held out. This creates a reproducible sample that avoids relying on the index's usual sort order. Sayers et al. (2024) describe NCBI's integrated resources and programmatic retrieval. National Library of Medicine (2025b) documents the supplemental journal element through which country, linking ISSN and NLM's journal identifier are linked to a citation.

Each of the 1,080 sampled citations belonged to exactly one observed NLM journal ID. We extracted that ID, linking ISSN, the ISSN supplied on the citation's journal record, and place of publication. Item titles, abstracts, author information and article text were outside the comparison. Journal identifiers and the observed ISSNs were collapsed to the serial level. A journal appearing three times accompanied by the same registered identifiers contributed one title to the principal analysis and three citation observations to

a separate weighting. The citation weights describe exposure in these equal-size day samples. They do not reconstruct the proportions that would be obtained by pooling every PubMed record from the three days or a longer period.

The directory side used the publicly downloadable DOAJ journal CSV (Directory of Open Access Journals, n.d.). The file in use was downloaded at the same collection stage as the PubMed metadata and describes the directory's listed journals as exposed in that export. From the CSV, we indexed the public DOAJ record ID, print ISSN, electronic ISSN, publisher country and secondary-organization country. Identical ISSN strings create potential links. All observed linking and citation-level ISSNs for an NLM journal were compared with both DOAJ medium fields. The linking ISSN convention described by the ISSN International Centre (n.d.) motivates identifying the journal across media. Christen (2012) distinguishes different sources of ambiguity in record linkage. Here the primary join was restricted to a unique candidate DOAJ journal. A source with no candidate stayed in the frame counts, and no title or publisher-name similarity was used to supply an alternate link.

3.2. Counting agreement in three different ways

For our first measurement, a minimum comparison folds letter case and repeated whitespace but keeps geographic wording unchanged. England and United Kingdom therefore differ at this stage. The second measurement harmonizes explicit geographic conventions at the sovereign-state scale. The crosswalk recorded the four UK constituent countries and commonly recorded label variants. It was fixed in the analysis script and makes no replacements based on observed agreement rates. The descriptions in the Government Digital Service (n.d.) country-code guidance and the statistical nomenclature of the United Nations Statistics Division (n.d.) motivate the difference between a sovereign-state category and a locality label. Once the labels are harmonized, each linked journal contributes one place category on the PubMed side and one publisher category on the DOAJ side. Country changes remaining after harmonization are informative about those source roles and possible metadata differences, rather than a judgment about the objectively correct attribution.

The same observations support two denominators. The first is the unique matched journal, equally weighted for a serial inventory. The second is each sampled citation that inherits its paired journal's country fields. We report both from the same linked population to show how record exposure changes the practical effect of disagreement. The sample was formed at citation level, so prolific journals already have a higher chance of entering the observed inventory. The title-level percentage describes the journals observed in that sample and matched to DOAJ. The citation-weighted percentage then gives each citation to those journals equal weight within the same sample. Neither measure estimates worldwide publisher country coverage.

A final diagnostic checks the country of another organization on the same DOAJ record, where supplied, only for the journal records already used in the paired analysis. This does not change the primary comparison or recode a disagreement as agreement. Where PubMed's place and DOAJ's publisher country differ, an exact match between PubMed and the secondary-organization country confirms that the latter value is present in a distinct catalog role. The study uses this administrative coincidence to make potential role ambiguity tangible. It does not identify which organization performed publication functions or why the catalog assigned one role and not another.

4. Results

4.1. Exact links and geographic convention

The complete three publication-date frames returned 4,844, 4,676 and 4,360 PubMed identifiers, respectively. Their sampled portions contained 360 citations each, with no repeated PMID across the three sampled portions. The resulting 1,080 citations identified 627 unique journals. One journal lacked an eligible ISSN and 384 had no DOAJ match on the observed ISSN keys. The remaining 242 journals linked to exactly one DOAJ record and provided both country fields. They account for 424 sampled citations. Using only the explicit linking ISSN recovered the same DOAJ record in 226 of those 242 cases. The additional citation-level ISSN option contributed matches for 16 observed journals. The recovered journals represent only the intersecting subset of the sample, with the unmatched serials retained in the reported denominators for coverage.

The two raw country spellings agreed on 120 journals, or 49.6% of the linked set. The harmonized view reduced the 122 literal differences to 33. Among the 89 resolved differences, 86 involved England in PubMed and United Kingdom in DOAJ, two involved South Korea label variants, and one involved Turkey and Türkiye. The transformation therefore increased agreement to 209 of 242 journals, or 86.4%. Most initial disagreement in this sample came from one specific subnational-to-national convention. A simple exact string comparison would bundle that naming decision together with cases where the sources assign genuinely different country categories.

Table 1. *Country agreement on the same 242 matched journals under two denominators.*

Outcome after exact journal linkage	Journals out of 242	Sampled citations out of 424
Same literal label	120 (49.6%)	230 (54.2%)
Different wording, same harmonized country	89 (36.8%)	152 (35.8%)
Different harmonized countries	33 (13.6%)	42 (9.9%)
Total	242	424

Note. Citation weights count sampled PubMed records, with repeated journals counted once per sampled citation. The country definition is unchanged within each source. Percentages are rounded.

4.2. Aggregate country attribution

The United Kingdom category received 90 journals under the PubMed place field and 105 under the DOAJ publisher field. Its share therefore increased by 15 of 242 journals, or 6.2 percentage points. The United States category moved from 50 to 43 journals. Switzerland moved from 59 to 60 journals. The three largest categories were in the same rank order in both views, while their allocations changed. Seventeen directed country pairs accounted for the 33 remaining disagreements. The most frequent were United States in PubMed and United Kingdom in DOAJ on seven journals, followed by New Zealand in PubMed and United Kingdom in DOAJ on four. The Netherlands had seven journals under each field, despite substantial movement. Equality of those two totals means the inflows and outflows offset in this sample. It does not show the same seven journals supplied each total.

Through the citation-weighted lens, the United Kingdom category gained 11 of 424 citations, an increase of 2.6 percentage points rather than the larger journal-weighted difference. Journals with discordant harmonized fields accounted for 42 citations, or 9.9% of the paired citation sample. That proportion was below the disagreement share among the journals themselves. Concordant journals appeared in 382 sampled citations, an average of 1.83 citations across 209 titles. The 33 discordant journals appeared in 42

sampled citations, an average of 1.27 each. This describes the distribution of observations captured during the selected dates. It provides no forecast of a country's annual output and no estimate of how frequently readers of either catalog encounter these values more broadly.

Forty-four of the paired DOAJ journal records specified the country of another organization. Eight were among the 33 journals with discordant primary country labels. In three of those eight, the secondary-organization country matched the harmonized PubMed place value. The directory's publisher country for these three nevertheless remained different. The other five had a secondary-country value that did not reconcile the observed place label. This diagnostic reveals three direct examples of the place value existing in a different directory role. It cannot determine whether NLM selected that role deliberately.

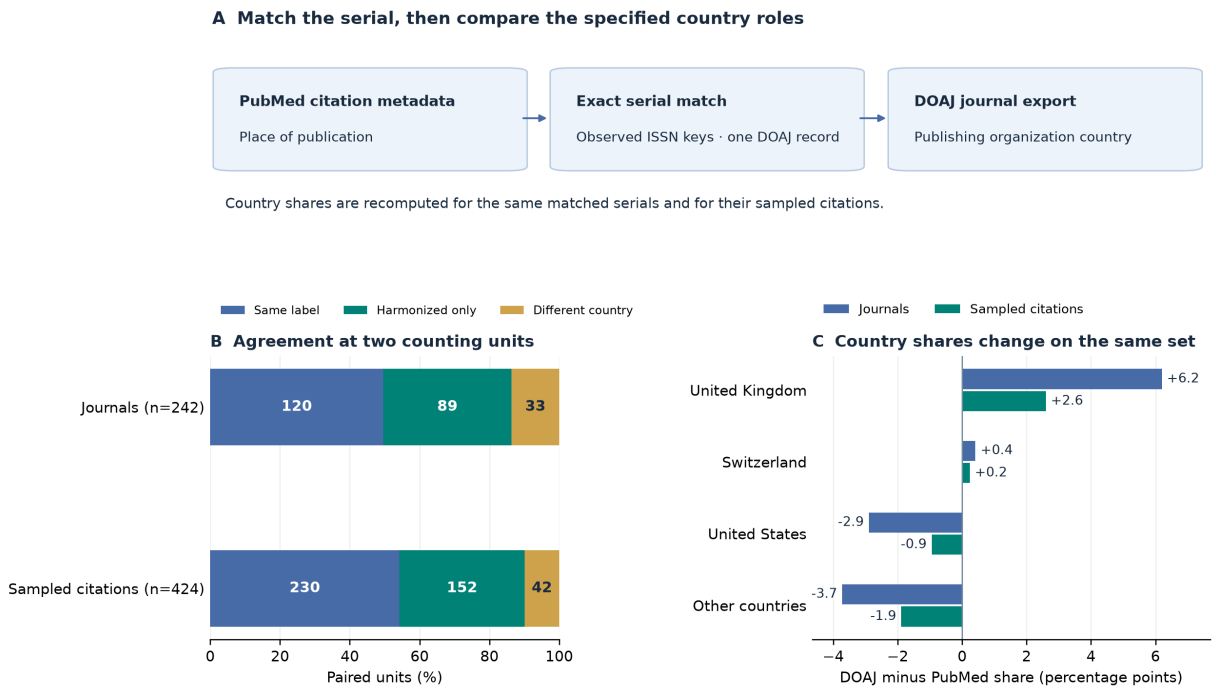

Figure 1. *Panel A shows serial resolution and the two administrative roles compared. Panel B shows where harmonization changes agreement at both denominators. Panel C shows percentage-point changes in aggregate country shares when using the DOAJ publisher field in place of the PubMed place field.*

5. What can a geographic inventory preserve?

The dominant label difference illustrates one way in which apparent catalog inconsistency can be converted into a defined scale choice. At the country level of this study England and the United Kingdom map to the same code. At a local or regional level the distinction carries information. Two input columns preserve what each index supplied while a crosswalk defines a dashboard category. The survey of data quality by Batini et al. (2009) and the repository metadata study of Park and Tosaka (2010) both emphasize the role of explicit definitions in assessing documentation quality. A source field can be populated and internally meaningful even when it cannot substitute for a similarly named field from another catalog.

A second consequence is that a consistently implemented crosswalk still does not settle role differences. The mismatches include several country pairs in opposing directions, and some net changes are smaller than the number of titles reassigned. Work on bibliographic coverage by Visser et al. (2021) and Gusenbauer (2022) shows that index comparisons depend on the frame. Delgado-Quirós and Ortega (2025) compare the availability of bibliographic entity fields. Culbert et al. (2025) find that a source can include work identifiers while exposing different relationship coverage. Our results add a compact

example of varying administrative meaning within a fixed set of identifiers. They can inform how a journal inventory labels its joins before it aggregates the attached fields.

The underlying data supply chain is another limitation. Hendricks et al. (2020) describe distributed metadata contributions in Crossref. De Jonge and Kramer (2026) show patterned differences in the completeness of registry information associated with submission infrastructure. Those studies describe mechanisms through which the metadata attached to an identifier can differ across settings. The present information does not document how a particular country field reached PubMed or whether a specific journal updated a directory record. Snapshot comparison identifies the resulting field values and leaves their production history open. It therefore cannot adjudicate changes in publisher ownership, editorial office location or where individual authors were working.

Reproduction requires keeping both source projections and the denominator rules visible. The FAIR guidance of Wilkinson et al. (2016) links reuse to documented metadata, while Peng (2011) separates computational reproducibility from whether an independent study would observe the same pattern. Gebru et al. (2021) call for clearer descriptions of dataset composition and intended use. The stored crosswalk, linked serial IDs, country fields and sample frame make the reported contrasts reproducible. A future census could use the same definitions against other source snapshots or pair directory data directly with historical catalog exports. The present observations identify separate adjustments from matching the serial, harmonizing the country label and changing the field or unit used in the tally.

Data and code availability

The reproduction record links the downloaded DOAJ CSV, frozen PubMed projections, quantitative outputs and plotting code. Author contributions, funding and competing-interest declarations await author confirmation.

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