

Canadian OA scholarly journals: An exhaustive survey

Version 1.0

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February 6, 2020



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1. INTRODUCTION

It is common knowledge that the number of scholarly journals is poorly known, with estimates ranging from 25 000 to close to 100 000 (Mongeon & Paul-Hus, 2016; Hampson, 2018). Likewise, the total number of *Open Access* scholarly journals is largely unknown. There are more than 13 000 journals indexed in DOAJ, but it's clear that many legitimate (i.e. non-deceptive) OA journals are not included. For instance, in a far from exhaustive study (Björk, 2017), 6 000 OA journals hosted by scholarly portals were identified around the world, of which less than 20 % were in DOAJ. In a more recent (and more focussed) study, the same author (Björk, 2019) found that only 43 % of Nordic OA journals were indexed in DOAJ, with local languages being notably underrepresented.

In early 2018, I wanted to quote an estimate of the number of Canadian OA journals. All I was able to find was a figure (220) based upon a limited subset: journals published by the 36 Canadian research libraries hosting the OJS platform (Willinsky, 2017). I could add the 50-odd OA journals then hosted by Quebec's [Érudit](#) consortium but not included in the former, to arrive at 270, almost twice the number of Canadian journals indexed in DOAJ.

One year later, the [Canadian Research Knowledge Network](#) (CRKN, 2019) made available a list of 426 OA journals hosted by Canadian universities libraries. However, the list contained some duplicate titles, as well as many inactive, delayed-access, or toll-access journals, while most Érudit, and many DOAJ-indexed journals were missing.

I decided that the time was ripe to try and get a more definitive and accurate figure. But obtaining this numerical result was not my only, or even main goal. What really interested me was to investigate these Canadian OA journals not indexed in DOAJ, which has become a focal point in assessing the seriousness and legitimacy of OA journals.

I also wanted to contribute to the long-term objective of seeing most, or at least more Canadian OA journals indexed in DOAJ. Why so many of them are not there, if one excepts of course deceptive journals, that DOAJ now filters out quite efficiently? If these journals are indeed legitimate, what changes or adjustments, if any, would they have to make in order to meet DOAJ requirements? Let's not forget that the role DOAJ isn't only to vet journals, but also to promote best practice and transparency, and to help journals implement them.

Furthermore, I wanted to know how Canadian OA journals deal with copyright, and what are the advantages of DOAJ indexing in this regard, as copyright and licensing form an [essential part](#) of DOAJ requirements. I was also hoping to get a sense of the accuracy of copyright information provided by DOAJ for every indexed journal.

I first used four main sources, all curated lists of scholarly OA journals: the three mentioned above, (DOAJ, CRKN, Érudit), plus ROAD (<http://road.issn.org>), ISSN's Directory of Open Access Scholarly Resources. To cast a larger net, I resorted to less structured or specific lists, including [Mir@bel](#), a list of French language journals, supposedly scholarly and OA, which proved in the end not very efficient at identifying either OA or scholarly content, provided some titles not found elsewhere.

I must point out that I didn't use the list of "Canadian" journals (Crawford, 2017) identified as possibly deceptive in his Gray-OA study, that is for-profit journals charging publication fees, but not indexed in DOAJ and, according to Crawford, most likely not really Canadian.

All in all, I identified over 1200 unique titles (Table 1). I excluded readily more than half of them, due to characteristics that were either factual or easy to assess with a minimal investigation. These were journals:

- unreachable, even by a Google search on the name;
- not OA (toll access, hybrid or delayed-access);
- having ceased, or not started yet to publish (in 2018, the last year considered);
- not Canadian, according to both ISSN and DOAJ, or due to obvious characteristics (e.g. a journal hosted by a non-Canadian university);
- not scholarly, either by their own admission, or due to easily observed characteristics (repositories, bulletins, newsletters, magazines, etc.)
- deceptive, as evidenced by exclusion from DOAJ for suspected editorial misconduct.

This left a list of 519 arguably **active, legitimate, Canadian OA scholarly journals** in 2018, the year of reference used in this study.

Table 1
Number of journals collected and examined, and of journals (indexed or not in DOAJ) retained as active, legitimate, Canadian, OA, scholarly journals, and analyzed.

	Total	Indexed in DOAJ	Not indexed in DOAJ
Collected and examined	1 252	152	1 100
Retained and analyzed	519	147*	372

* Among the 152 Canadian journals in DOAJ dataset in May 2019, one was password-protected, one a duplicate, and three were inactive.

Each one of these five terms can be defined in a more or less restrictive way, including among my main sources. I obtained the number of 519 by choosing inclusive definitions for all the terms (often the most inclusive in case of discrepancies among my main sources) and giving journals the benefit of the doubt even when I thought a sound assessment would have required more information or details than what was available in the journal website.

Although my investigation may have missed some titles, I would say that the figure of about 500 journals is an upper limit; many journals would be excluded using more restrictive definitions, or applying them in more stringent way.

For each of these 519 journals, I collected the data and information I deemed necessary or useful to draw a portrait of the Canadian scholarly OA journal landscape, with an emphasis on potential for DOAJ indexing, for non-already indexed titles, and copyright management, for all titles.

Let me finish this introduction with two remarks of a more personal nature.

First, I'd like to pay tribute to my (virtual) mentor, Walt Crawford, the ultimate authority in factual information on OA journals (Crawford, 2019), and in all matters related to deceptive journals. This scholar (I know he doesn't claim to be one) actually visited, a few times since 2012, all DOAJ-indexed journals (more than 13 000, currently), collecting basic data like article count and publication fees – data that I used in this study. He has also written the most convincing – and witty – analysis of Beall's sadly famous list of "predatory" publishers / journals (Crawford, 2014). He was a source of inspiration all along these months I spent visiting and revisiting hundreds of journal websites.

Second, and here again I follow Walt's footprints, I decided to make all my data available. Although I've been for a long time a devoted advocate of Open Access, which leads naturally to Open Science, it is the first time I actually do this. As I worked relentlessly in my spreadsheet, thinking that others will have to understand its content, and will surely notice its weaknesses, I realized the full consequences of transparency, and the deep truth in the expression "Open Science is science done well".

Disclosure

I am Associate Editor of one of the DOAJ-indexed journals retained for this study, the [International Journal of Technology in Higher Education](#), which is also hosted on Érudit. As part of my responsibilities, I collaborate from time to time with the Érudit team, mainly to discuss copyright issues, to which a part of this study is devoted.

2. DEFINITIONS AND ISSUES

In order for a study, and its results, to be meaningful and correctly understood, one has to be clear on what is its object. In the present case, it may be expressed as:

active (in 2018), legitimate, Canadian, Open Access, scholarly journals

Each of these terms must be given a clear, rigorous and well-founded definition. This means making decisions and choices, some arbitrary, others more debatable, guided by the goal of the study and the beliefs and viewpoints of the researcher.

As stated in the previous section, I retained for my study 519 titles meeting very inclusive criteria (Table 2) drawn from those, stated or inferred, used by my main sources (DOAJ, CRKN, Érudit, and ROAD), retaining generally the less restrictive one in case of discrepancy between these sources.

Table 2
Active (in 2018), legitimate, Canadian, Open Access, and scholarly journals: definitions of each term

Term and dimensions	Definition
Active	
• article output	No threshold.
• publication delays	At least one issue in 2017.
Legitimate	Don't charge publication fees
• fees / type of publisher / DOAJ indexing	OR is produced by a for-profit publisher with at least one journal indexed in DOAJ OR is run by or under the auspices of a scholarly society
Canadian	Canadian according to DOAJ or ISSN, or hosted by a Canadian university.
Open Access	Immediate, permanent toll-free access to all articles.
Scholarly journal	Peer-review is performed by external reviewers
• Peer-review	OR (for HSS only) by Editorial Board.
• Content	1/3 of content consists of peer reviewed original research and/or review papers.
• Proceedings	Contain peer-reviewed articles associated to the presentation (excludes abstracts, posters, etc.)
• Student journals	Show evidence of significant participation of researchers (graduate students included) in editorial process.

The remaining of this section is a discussion on each of these definitions.

2.1 Active journal

This is both the simplest and most arbitrary definition. DOAJ considers inactive a journal that have not published in the last two years. However, one must take into account that:

- not all journals display publishing or online availability dates, which can be significantly different (most often anterior) from the issue year;
- many journals have only one yearly issue, often available online at the end of the year or a bit later;
- small journals can be quite late in their publishing schedule (up to almost three years) , some skipping a year from time to time.

I retained as active journals with at least one issue with the year 2017 (it may have been published later). Among the 30 journals that had their latest issue in 2017, I estimate that about 20 haven't published in the last 2-3 years, based upon available publishing dates. They would be considered inactive by DOAJ. Indeed, my guess is that most of these journals have ceased to publish, except for a couple that announced an upcoming 2019 issue. For consistency, journals are considered active (in 2018) even if they announced that it was their last year of publication, while journals started in 2019 are considered inactive.

There is also the issue of article output. DOAJ requires five research or review articles / year, and ROAD five articles / issue; CRKN doesn't seem to have any such requirement. I consider ROAD's threshold ill-conceived, as a journal splitting its yearly output among a few issues could be excluded even if it publishes more articles per year than another, one-yearly-issue journal. More generally, I don't see the relevance of such a criterion, except perhaps for the indexing organization, on an administrative basis. Thus, I didn't exclude any journal based on its annual article output.

2.2 Legitimate journal

This term is directly related to the issue of deceptive journals. Note that as a matter of principle, I avoid the "p" word, widely used but seldom in a very rigorous way, even in the scholarly literature: most often one simply assumes that Beall's words (and lists) are chapter and verse in this matter. I can but suggest that interested readers have a look at the work of Walt Crawford, who is in my humble opinion the authority on the subject. I recommend particularly his piece "Ethics and Access 1: The Sad Case of Jeffrey Beall" (Crawford, 2014).

But how can defines this notion, once one rejects the overly simplistic and scholarly dubious "Beall-listed = deceptive"? An international group of researchers (Grudniewicz et al., 2019) recently coined a general definition of predatory journal (they decided on practical grounds to stick to the term while acknowledging its downsides). They also described the main characteristics to look for when assessing a journal for deceptive practices: false or misleading information, deviation from best editorial and publication practices (including notably those developed by a group of scholarly publishing organizations, DOAJ among them), lack of transparency, and aggressive, indiscriminate solicitation.

Clearly, using these criteria is much too difficult and time-consuming for a study like this one. I speak here with experience, having tried a few times in another context to assess suspect journals.

In a first stage, I treated as suspect a journal that charges publication fees and is produced by a for-profit publisher with no journal indexed in DOAJ, unless it is run¹ by or under the auspices of a scholarly society, which can either produce the journal itself or have it produced by a publisher, for-profit or not.

1. I introduce here, and will use later, the difference between *running* a journal, by which I mean controlling its scholarly character and activities (aims and scope, editorial roles and decisions, peer-review), and *producing* a journal, that is managing its administrative and technical operations.

I collected 17 titles, found in ROAD or Mir@bel, meeting this definition. Twelve of them had been [removed from DOAJ](#) in 2015 or 2017 for “suspected editorial misconduct”; they are from two publishers (CCSE and Elmer Press) that saw almost all their journals simultaneously removed from DOAJ, for the same reason. I didn’t investigate these journals; all but one are in Gray-OA (Crawford, 2014).

I retained the other five journals, even though they’re not indexed in DOAJ and there are some signs suggesting to exert some caution. Two of them are from a publisher owned by the well-recognized deceptive publisher OMICS (Brown, 2016; Brainard, 2019), a fact displayed very discreetly on the publisher website. Two others were removed from DOAJ for “not adhering to best practice”; this doesn’t necessarily imply deception, as I observed that many journals arguably legitimate on all accounts don’t follow this best practice in all its details (see [section 4](#)). One of these last two claims anyway to be indexed in DOAJ, which can be seen either as an *bona fide* error or as a sign of deceptive behaviour. It’s worth noting that I found four similar cases (removal for not adhering to best practice or erroneous claim of DOAJ indexing) among not-for-profit, fee-free, university-based journals that I don’t consider suspect.

2.3 Canadian journal

This definition and the next one are the most debatable, as both their crafting and their application to individual cases involve subjective choices and judgment calls.

For DOAJ, the country is the place “where the publisher carries out the majority of the editorial processes, business functions and day-to-day activities”, while ROAD speaks only of the “location of the publisher”, defined by a physical address in the country. In a somewhat similar spirit, CRKN considers a journal Canadian if it is hosted by, or obtains financial or in-kind support from a Canadian university library², so that in a sense it can be considered as “published” by the university.

I classified journals as Canadian using this general approach, resolving a few conflicts (different countries according to different sources) by considering Canadian any journal thus classified according to one or the other of these criteria. However, I realized that it raises serious questions.

First, considering the nature of scholarly publishing, and the globalization of scholarly activities, the notion of a journal (or publisher) being located, or carrying out its activities in a specific country is very limited, at least if one thinks of all that is involved in producing a journal: creating, defining and maintaining the journal; managing peer-review; producing the issues (copy-editing, typesetting) and disseminating them (hosting and maintaining a platform and a server).

Second, many local (as opposed to international) scholarly societies resort to private, for-profit publishers to produce and disseminate their journal(s). Most of the 300 Elsevier journals indexed in DOAJ, for instance, fall into this category. Half of them have Netherlands as country of publishing, even if they are in fact run by societies or institutions based in another country, where the “editorial processes” are conducted. An example among others: the *Journal of King Abdulaziz University - Medical Sciences* (NL in DOAJ). The same is observed, to varying degrees, among other large commercial publishers. In many of these cases, the country specified in ROAD (ISSN) is the country of the society or institution, not of the publisher.

The criterion of hosting by a Canadian university can lead to the same situation. According to CRKN this time, the *Journal of the American Association for the Advancement of Curriculum Studies* and the *Undergraduate Research Journal at the University of Northern Colorado* are both Canadian, as are a number of others not Canadian according to ISSN.

2. Émilie Lavallée-Funston, private communication (2019-07-02).

The country is also an important issue in regard to deceptive publishing, where the country may be part of the deception. In his “Gray OA” study, Walt Crawford estimates that “90% or more of the journals listed as being published in the United States, United Kingdom or Canada are actually published elsewhere”.

More fundamentally, one has to ask the question: why do we want, or need to associate a journal with a country? From an economic perspective, the location of the publisher may make sense, for issues like jobs, purchases, profits, and taxes (though the same argument about globalization and outsourcing could be relevant here).

From a scholarly perspective, I would contend that when one speaks of a Canadian journal, one thinks of a journal where the scholarly functions are run and carried out, in whole or in substantial part, by Canadian organizations or scholars affiliated with Canadian institutions, irrespective of where, for instance, copy editing and page setting are actually performed, or where the server is located.

This is the perspective of Canadian funders, that support financially a number of journals, and have recently begun to promote and support open access publishing. For instance, here is how the Social Science and Humanities Research Council (SSHRC) define a Canadian journal for the purpose of their scholarly journal funding program (Government of Canada, 2018).

[the journal must] meet at least one of the two following criteria:

1. a minimum of one third of the core editorial board is affiliated with an eligible Canadian postsecondary institution; and/or
2. the journal title is owned by a Canadian not-for-profit organization.

Another criterion is that the exclusive copyright to its contents may not be owned by a foreign publisher.

Though this definition is not the one I used to filter out non-Canadian journals, I think it makes perfectly sense. It is also aligned with my goal of helping Canadian OA journals improve their practices and, eventually, become indexed in DOAJ. This means that those who actually make the decisions (members of the society and/or the Editorial Board) would be more open to Canadian initiatives, and eventually eligible to financial support from Canadian institutions or organizations. For the sake of clarity, I will use “Canadian-run” to designate journals meeting this definition.

The application of the above mention criteria to individual cases involves a margin of interpretation, as the notion of “core editorial board” and, more generally, the terminology used to describe the structure of journal teams is far from standardized. With this caveat, I estimate that about 70 of the journals I retained are not Canadian-run; half of them are indexed, and thus considered Canadian by DOAJ.

2.4 Scholarly journal

This issue is probably the most debatable, and the most difficult to tackle. [According to DOAJ](#), a periodical is called a research journal if it “reports primary results of research or overviews of research results to a scholarly community.” The guides prepared by libraries to identify scholarly journals (see, for instance those of [Cornell](#) and [Indiana University Bloomington](#)) describe a number of characteristics that distinguish scholarly journals from other periodicals: type of publisher, affiliations and/or credentials of authors and journal team members, target audience, properties of articles (type, structure, level of language, format, length, number and type of references, etc.).

I was able to exclude without much doubt, often after a quick, shallow examination, many titles collected from my “other” sources (as opposed to the four main ones) and not already excluded for factual reasons (inactive, toll- or delayed-access, etc.). These were, notably, newspapers, magazines, newsletters, blogs, websites, repositories, etc.

In most other cases, this assessment implies deeper, often more subtle characteristics of the journal, and is both subjective and time consuming. A shortcut is thus often proposed: equating “scholarly” to “peer-reviewed”. This is what I retained for the inclusive definition.

It still leaves open the question of the exact meaning of peer-review. It’s often limited to “external” review, performed by “peers” (scholars) others than the journal Editors. But it may also include “internal” review by the Editors, who are also (normally) peers, after all. This type of internal evaluation is recognized by DOAJ, but only for Humanities and Social Science (HSS) journals. As a further condition, DOAJ requires that 1/3 of the journal content consist of original research and/or review papers.

I adopted DOAJ criteria, assuming that:

- for HSS journals, editorial review is a type of peer-review even if a journal doesn’t use that expression;
- book reviews, widespread in HSS journals (sometimes outnumbering research articles), constitute “review papers”.

I decided also to give a generous interpretation to the scant descriptions (if any) of the peer-review process and of the role and composition of the Editorial Board found in some journal websites.

These precautions notwithstanding, two types of journals raise particular issues: student-run journals, and journals publishing conference proceedings.

Student-run journals

There are striking differences in how my main sources treat student journals.

- No student journal is hosted by Érudit.
- Eight are indexed in DOAJ, that accepts these journals, including those run by undergraduates, if they have at least two advisors with a Ph.D. (DOAJ, s. d., sect. 3-Publishing best practice and basic standards for inclusion).
- Both CRKN and ROAD include about 60 student journals (90 journals are in one or the other), but I couldn’t find any pattern that could suggest what are their acceptance criteria.

Also, in his study of OA journals from Nordic countries, (Björk, 2019) excluded journals publishing only articles written by students.

One could be tempted to exclude all student-run journals, or all undergraduate ones. Having faculty advisors, or researchers involved in peer-reviewing, may ensure that the articles contain no blatant errors or omissions, but not necessarily that they contribute to the advancement of knowledge. Also, one of the goals of these journals is to provide students, especially undergraduates, a showcase for their academic works, or a practical introduction to scholarly publishing.

However, excluding all student journals, something neither my main sources³ nor the Social Sciences and Humanities Research Council (for its scholarly journal funding program) have decided to do, would be hard to justify. My personal stance would be to retain journals with researchers (graduate students, at the very least) actively participating in the editorial process, not solely as advisors.

3. Student journals are not formally excluded from Érudit. However, the eligibility criteria be would make it difficult for many student journals to be accepted: Editor-in-Chief must be a professor, and 1/3 of the members of the Editorial Board researchers, affiliated with Canadian universities (Hocine Chehab, personal communication, 2019-10-16).

Nevertheless, in line with my general stance on inclusivity, I decided to treat student-run journals, as to scholarly character, just like the others: a sufficient share (1/3) of research or review articles, and evidence of peer-review, external or by Editorial Board in HSS, were sufficient.

This made me retain 124 student-run journals (out of 189 collected titles). This represents a substantial share of Canadian OA journals, especially in one considers the 372 journals not in DOAJ. For those interested, I describe in Appendix C how excluding all student journals would affect the results of this study.

Conference proceedings

Some periodicals host only the proceedings of a given (most often annual) conference. Can they be considered scholarly journals? My experience in reviewing and correcting references, and having to assess the exact nature of various types of “proceedings”, suggest that this term may refer to anything from a website or repository hosting abstracts, or the unedited and unrefereed manuscripts sent by all presenters, to full-fledged journal-like venues hosting papers submitted (and often expanded) after the conference, and thoroughly peer-reviewed like “normal” journal articles. The latter are sometimes bundled in special issues, or in specific sections of regular journal issues.

In ROAD and in Érudit, proceedings are considered a different “OA resource type” than journals, but others sources don’t make this distinction: both DOAJ and CRKN include such titles.

I decided to retain proceedings, except those that lack the essential characteristics of journals, because:

- they contain only abstracts or posters, or
- they are merely platforms hosting conference papers, with very scant, if any, information about the submission process and/or peer review.

This, along with the other definitions, made me retain 14 of the 39 collected proceedings titles.

2.5 Open Access journal

I won’t pretend there is a consensus over the definition of OA. Many have pointed out that this makes discussions and comparisons difficult, for instance if one wants to estimate the overall share of OA articles or journals.

I chose the following: **a journal is OA if it offers immediate, permanent toll-free access to all its articles.** This means no embargo / moving wall, no hybrid journal, and no requirement to create an account to access articles, even without a fee.

This definition is apparently shared by most of my sources. A notable exception is DOAJ, that requires a user licence, either one of the six main Creative Commons licences or a custom one, no more restrictive than CC BY-NC-ND. Also, delayed-access journals were included in the CRKN list, but a representative confirmed me they will be removed in the final, official, version⁴ (not yet launched as of February 2020).

3. THE GENERAL PORTRAIT

In this section I first present a somewhat impressionist overall portrait of these journals, drawn from my exploration of the website of each one of the 519 journals I retained. I then present detailed factual characteristics of these journals, with values for three sets or subsets allowing relevant comparisons:

4. Émilie Lavallée-Funston, private communication (2019-06-26).

- (1) Between Canadian journals indexed in DOAJ or not, and
- (2) When DOAJ data are available, between Canadian journals indexed in DOAJ, and the set of DOAJ journals published in the 50 (out of 118) high-income countries⁵.

3.1 An impressionist portrait

Having peeked into close to a thousand journal websites, and explored in depth half of them, revisiting some more than once, I must say that I'm amazed by the diversity I discovered. At one extreme, I encountered a lot of small, fee-free, low article-output journals, run and supported by minimal resources, using basic websites (OJS plays here an essential role) and performing minimal page-setting, with papers looking sometimes exactly like author manuscripts. At the other end of the spectrum, I stumbled upon large journals with professional-looking websites, often supported by wealthy societies (especially in medicine and health science), many charging hefty publication fees. I was also surprised by the large number of student-run journals, that seemed very serious, though I didn't assess the scholarly character of their articles. Some journals (student-run, mainly) cover all areas of knowledge, while others are ultra-specialized; for instance, there is a journal exclusively devoted to Bruce Springsteen, aptly titled [BOSS](#).

I was also a bit stunned by the diversity of the content published by these journals. The model of the scholarly of scientific journal devoted to the dissemination of peer-reviewed original research results among researchers is certainly well represented, in all sectors. However, many journals offer along this traditional content a wide variety of other types of content, peer-reviewed or not, often specific to the field, that can be also considered "scholarly". I found, among others: book reviews (or reviews of other media or events), literature reviews, case studies, case reports, field reports, research notes, observation notes, commentaries, opinion pieces, essays, interviews, and even sermons (in a theology journal). Some journals, mostly in the Arts & Humanities, combine scholarly content and creative works (poems, short stories, videos, artwork).

Something that also struck me is the lack of information or details on the editorial process in a fair number of journal websites. In a few extreme cases, one finds nothing more than a statement that the journal is peer-reviewed and has an Editorial Board, sometimes with just a list of names without affiliations, or even without any list whatsoever. True, many, if not most journals describe extensively their editorial process, but other information, relevant to readers, prospective authors or both, is often incomplete or simply missing. I think here of the nature and role of the various categories of members of the Editorial Team, with names like Editorial Board, Advisory Board, Review Board, and titles like Editor-in-Chief, Associate Editor, Section Editor, Review Editor, Managing Editor, or simply Editor. I refer also to information on publication fees, most precisely the absence thereof, and on copyright (ownership, user rights, author reuse rights).

I sometimes had the impression that some journals view their audience as limited to those who already know them well, and thus don't need explanations. It's like they didn't realize that being OA increases dramatically the "risk" to be discovered by both readers and prospective authors who don't have any clue of who they are and, more fundamentally, if the journal is worth submitting articles to, or reading and citing them. With all the ongoing discussions about deceptive journals and the way to stay clear of them, this is certainly a cause of concern.

5. I used the same source (The World Bank, s. d.) than journals offering publication fees waivers to authors from middle- or low-income countries. I also did comparisons with the entire DOAJ, but found no real differences except for a few characteristics: types of publisher, means and, above all, fees, where the restriction to high-income countries is highly relevant.

Despite all these differences, imperfections and limitations, I perceived in these often very modest ventures a true dedication to the construction and dissemination of knowledge, and to the scholarly conversation. This is probably why I was a bit sad, or disappointed, to find that they weren't always efficient at conveying it to uninformed visitors of their websites. As stated before, DOAJ indexing is one of the best ways to improve this situation.

3.2 Characteristics of Canadian OA journals

Overall characteristics

As shown in Table 3, The 519 Canadian OA journals retained in this study (**all-CA** in what follows) published about 10 600 articles in 2018, a little more than half coming from the 372 journals (72 % of total) not indexed in DOAJ (**non-DOAJ-CA**).

Compared to the set of DOAJ journals from high-income countries (**DOAJ-HIC**), Canadian OA journals indexed in DOAJ (**DOAJ-CA**), and non-DOAJ-CA journals even more so, are typically small-output, university or society-published journals in the Humanities and Social Sciences sector (HSS) that don't charge publication fees. About 1/4 of Canadian OA journals are run by students. Only 8 of these 124 journals are indexed in DOAJ (comparable data for the entire DOAJ are not available).

Table 3

Characteristics of Canadian OA journals, with comparisons between (1) Canadian journals indexed or not in DOAJ and (2) Canadian DOAJ-indexed journals, and DOAJ journals from high-income countries (DOAJ-HIC).

	All-CA	Non-DOAJ-CA	DOAJ-CA	DOAJ-HIC
Number of journals (% of All-CA)	519	372 (72 %)	147 (28 %)	5 987
Total articles in 2018 (% of All-CA)	10 644	5 645 (53 %)	4 999 (47 %)	478 794
Mean number of articles / year *	21	16	32	72
Median number of articles / year *	12	10	20	25
Journals with < 10 articles / year *	41 %	51 %	18 %	13 %
Published by university or society	88 %	94 %	72 %	48 %
Sector: Humanities & Social Sciences (HSS)	73 %	77 %	65 %	46 %
Journals without fees	90 %	92 %	82 %	62 %
Student-run journals (% of respective group)	124 (24 %)	116 (31 %)	8 (5 %)	–

* 3 year period (2016-2018).

Publication patterns and output

Canadian OA journals, especially in non-DOAJ-CA, are characterized by a low article output and an infrequent, sometimes irregular publishing schedule.

In the 3-year period analyzed (2016-2018), all-CA journals published on average 21 articles / year (Table 4), less than a third of DOAJ-HIC average (72 art. / year). Note that the high DOAJ-HIC average is partly due to a more heavily skewed distribution (see Appendix B); in these conditions, the median is a better measure of comparison, with 12 and 25 art. / year respectively, still a significant difference. The figure in non-DOAJ-CA is much lower: 16 art. / year on average, half that of DOAJ-CA. Here, the same difference is observed in the medians. Furthermore, 51 % of non-DOAJ-CA journals publish less than 10 art. / year, compared to 18 % for DOAJ-CA and 13 % for DOAJ-HIC. Conversely, only 15 % of non-DOAJ-CA journals publish more than 25 art. / year, compared to 38 % and 50 % for DOAJ-CA and DOAJ-HIC.

This tendency (DOAJ-CA lying between non-DOAJ-CA and DOAJ-HIC) in article output show up in all three sectors. In non-DOAJ-CA, BioMed stands apart both in terms of average output (two to three times that of the others) and the share of very-low output journals (half that of the others).

Table 4

Mean annual article output of Canadian OA journals (2016-2018) by sector, with comparisons as in Table 3.

	All-CA	Non-DOAJ-CA	DOAJ-CA	DOAJ-HIC
Mean number of articles / year				
All sectors	21	16	32	72
BioMed	45	38	59	90
STEM	27	17	38	98
HSS	15	13	24	28
Median number of articles / year*				
All sectors	12	10	20	25
BioMed	19	–	–	38
STEM	17	–	–	31
HSS	11	–	–	20
< 10 articles / year				
All sectors	41 %	50 %	18 %	13 %
BioMed	23 %	25 %	20 %	11 %
STEM	35 %	50 %	18 %	12 %
HSS	44 %	54 %	16 %	15 %
> 25 articles / year				
All sectors	21 %	15 %	38 %	50 %
BioMed	38 %	38 %	40 %	65 %
STEM	31 %	12 %	55 %	59 %
HSS	17 %	12 %	35 %	35 %

* Medians by sector are omitted in all-CA due to low number of journals in STEM and BioMed.

As shown in Table 5, Canadian OA journals are about as likely to publish only multiple or only single yearly issues (39 % and 45 %). As there is a strong correlation between the average article output and the fraction of years with multiple issues, one observes that DOAJ-CA journals are much more likely than non-DOAJ-CA to publish only multiple yearly issues. Conversely, DOAJ-CA journals are much less likely to publish only single yearly issues (24 % vs 54 %), to skip a whole year (1 % vs 14 %) and to haven't published after 2017 (1 % vs 8 %). This last situation can be linked to the large delays in the publication schedule of some journals; a 2018 issue published in mid-2019 is not exceptional; I found even two instances of 2017 issues published in mid-2019.

Table 5

Publishing pattern of Canadian OA journals (2016-2018),
with comparisons between DOAJ-indexed and non-indexed journals.

	All-CA	Non-DOAJ-CA	DOAJ-CA
Only multiple issue yearly volumes	39 %	29 %	65 %
Only single issue yearly volumes	45 %	54 %	24 %
Skipped at least a year	11 %	14 %	1 %
No issue after 2017 (as of Jan. 2020)	6 %	8 %	1 %

Types of publisher and sectors

An overwhelming majority (88 %) of Canadian OA journals are published by universities or scholarly/scientific societies, compared to 48 % in DOAJ-HIC (Table 6). The difference is due to the larger share of society journals in both DOAJ-CA and non-DOAJ-CA (~ 20 %), compared to DOAJ-HIC (10 %), and to the large share of university journals in non-DOAJ-CA, that are almost all (94 %) published by universities or societies.

A fair majority (74 %) of Canadian OA journals are in the HSS sector, compared to 46 % in DOAJ-HIC. This sector dominates both DOAJ-CA (65 %) and non-DOAJ-CA (77 %). The other two main sectors, BioMed and STEM, have somewhat similar shares in DOAJ-HIC (24-29 %), as well as in DOAJ-CA (15-17 %), while STEM's share is much lower (7 %) in non-DOAJ-CA.

Table 6
Types of publisher and sectors of Canadian OA journals, with comparisons as in Table 3.

	All-CA	Non-DOAJ-CA	DOAJ-CA	DOAJ-HIC
Type of publisher				
Commercial (for profit or not)	10 %	5 %	23 %	37 %
University or society	88 %	94 %	72 %	48 %
University	66 %	73 %	49 %	38 %
Society	22 %	21 %	23 %	10 %
Sector				
Humanities and Social Sciences (HSS)	73 %	77 %	65 %	46 %
Biomedicine (M)	14 %	13 %	17 %	29 %
Science, Technology, Engineering, Mathematics (STEM)	9 %	7 %	15 %	24 %
General	3,3 %	3,2 %	3,4 %	0,8 %*

* The actual figure is probably higher (see Appendix A).

Publication fees

Publication fees are uncommon in Canadian OA publishing: only 54 journals (10 % of total) and 26 % of articles had publication fees in 2018. This is three to four times less than the corresponding figures in DOAJ-HIC. Notably, fees are unheard of among student journals.

These results vary significantly according to sector and DOAJ indexing (Table 7).

Table 7
Journals and articles with fees by sector, with comparisons as in Table 3.

	All-CA	Non-DOAJ-CA	DOAJ-CA	DOAJ-HIC
Journals with fees	54	28	26	–
% of journals: all sectors	10 %	8 %	18 %	38 %
BioMed	41 %	38 %	48 %	70 %
STEM	31 %	19 %	45 %	50 %
HSS	2,1 %	1,7 %	3,2 %	11 %
% of articles: all sectors	27 %	15 %	39 %	72 %
BioMed	58 %	38 %	79 %	85 %
STEM	39 %	19 %	51 %	75 %
HSS	3,4 %	2,2 %	5,0 %	24 %

- Globally, journals in DOAJ-CA are more than twice as likely to charge fees than those in non-DOAJ-CA, while being half as likely to do so that DOAJ-HIC journals.
- In BioMed and STEM, DOAJ-CA journals are less likely (particularly in BioMed) to charge fees than their DOAJ-HIC counterparts.
- In HSS, only one Canadian journal out of 50 charge fees, DOAJ-CA and non-DOAJ-CA journals being respectively 5 and 11 times less likely to charge fees than HSS DOAJ-HIC journals.

Similar tendencies are observed in article-based percentages.

The 2018 average publication fees (among Canadian OA journals that actually charge fees) were about 1 400 \$ (CDN), the figure varying between sectors from 900 \$ (HSS) to 1700 \$ (BioMed). Here again one observes significant differences between groups of journals (Table 8).

- In BioMed and HSS, DOAJ-CA journals charge 50 % more than their non-DOAJ-CA counterparts.
- In STEM, DOAJ-CA journals charge relatively low fees: half as much as in non-DOAJ-CA, and a third less than in DOAJ-HIC.
- HSS DOAJ-CA journals may seem expensive, charging almost a third more than HSS DOAJ-HIC journals, but one must take into account that there are only three journals in this group.

Table 8
Mean fees (CAD, journal-based, among journals charging fees)
and number of journals, by sector, with comparisons as in Table 3.

	All-CA		Non-DOAJ-CA		DOAJ-CA		DOAJ-HIC
	Fees	n	Fees	n	Fees	n	Fees
All sectors	1 428 \$	54	1 359 \$	28	1 502 \$	26	1 779 \$
BioMed	1 689 \$	30	1 411 \$	18	2 106 \$	12	2 207 \$
STEM	1 198 \$	15	1 765 \$	5	914 \$	10	1 432 \$
HSS	888 \$	8	762 \$	5	1 099 \$	3	859 \$

It's worth mentioning an original model (I hadn't hear of anything of the like before) adopted by [New Proposals: Journal of Marxism and Interdisciplinary Inquiry](#), one the few HSS journals charging fees: authors are asked to pay the fees (350 \$) only if they have access to institutional funds covering these charges.

Copyright and licensing

About 1/3 of Canadian OA journals publish under an all-rights-reserved regime (Table 9). Almost all are in non-DOAJ-CA: in principle, this is not allowed in DOAJ. The others offer a user licence, either their own (4 % of total) or a Creative Commons licence (61 %). Among Canadian journals with a CC licence, the most liberal (CC BY) is used half of the time, just a little bit more than in DOAJ-HIC, while the next most popular is CC BY-NC-ND, used by 1/4 of the journals; these shares are quite similar among the four groups.

See [Section 5](#) for a detailed analysis on Canadian OA journals copyright policies and, more generally, how they manage issues and display information related to copyright and licensing.

Table 9
User rights and licensing in Canadian OA journals, with comparisons as in Table 3.

	All-CA	Non-DOAJ-CA	DOAJ-CA	DOAJ-HIC
All rights reserved	33 %	45 %	2,0 %	–
DOAJ-compliant licence (CC or equiv.)	64 %	52 %	97 %	100 %
Publisher's own licence	4 %	3 %	6 %	4 %
CC licence	61 %	49 %	90 %	96 %
CC BY*	49 %	48 %	51 %	44 %
CC BY-NC-ND*	27 %	28 %	25 %	30 %

* % of journals using a CC licence.

Editorial teams/boards

I examined the descriptions of Editorial Boards/Teams and noted (or searched with Google when required) their members' affiliation and credentials, in order to determine if the journals was Canadian-run and, mainly for student journals, the extent of the participation of researchers in the editorial process.

As explained in [section 2.3](#), the 519 journals I retained were considered Canadian by one or the other of my main sources, though there were inconsistencies between the sources. However, 71 of these journals (14 %) are not Canadian-run, having less than a third of their Editorial board/Team members affiliated with Canadian institutions. Among these, half are indexed in DOAJ, and 25 can be said to be international, no single country satisfying the 1/3 threshold.

As to student journals, the 124 titles retained were those where I found evidence of significant participation of researchers in the editorial process (and that satisfied the other criteria). Note that I consider as researchers not just PhD holders (faculty, other staff, postdocs, etc.), but also graduate students.

Comparison with journals from Nordic countries

The share of DOAJ-indexed Canadian journals (28 %) is smaller than what (Björk, 2019) observed in Nordic countries (43 %). Part of the difference is explained by the fact that he used more restrictive criteria. Notably, many, if not most student journals were excluded; doing the same in this study would increase the figure from 28 % to 35 %. The shares of the various sectors seem similar in both studies, if one assumes that biology journals, included here in BioMed, have not been included in Medicine and Health, but in Natural Sciences and Technology in that study. The main difference is found in publication fees, charged by only 4 % of Nordic OA journals, compared to 10 % in all-CA. The difference is even more significant when one considers student journals: excluding them from all-CA would increase the share of fee-charging journals to 14 %.

4. CANADIAN OA JOURNALS AND DOAJ INDEXING

4.1 DOAJ standards of inclusion

Since it tightened in a major way its acceptance criteria in 2014, DOAJ has become one of the most widely known and trusted organizations in the world of OA publishing. More than being just a vetting organization, indexing new journals and removing those it had previously accepted under its previous, minimal criteria, DOAJ aims at helping OA journals improve their publishing practice and increase their transparency. For instance, journals rejected are invited to reapply, and are given precise and detailed

recommendations to increase their chances upon resubmission. DOAJ has also launched or supported various initiatives, notably in the Global South, both to increase the number of indexed journals and to help those already indexed.

Indexation in DOAJ is an added-value for all journals, but even more so for commercial journals charging publication fees. In view of the phenomenon of deceptive publishers, authors want to be sure to obtain what they pay for. [Think, Check, Submit](#), an international, cross-sector initiative helping authors identify a suitable journal, has made DOAJ indexing one [their criteria](#). And as the other criteria, some duplicating those of DOAJ itself, are sometimes difficult or time-consuming to apply, this may well be the criterion most widely used by both readers and prospective authors.

It's therefore of some concern to observe that only 28 % of Canadian OA journals are indexed in DOAJ, including less than half of those that charge fees (Table 7).

It's not straightforward to determine, from the information available on DOAJ website, the exact set of conditions a journal must meet to be accepted, or remain indexed. The main source is [Publishing best practice and basic standards for inclusion](#), in the *Information for Publishers* page (DOAJ, s. d., sect. 3). A number of requirements are stated and explained there, but only a dozen are tagged as "basic requirements for entry in DOAJ" (Table 10, first column).

However, one finds in the same page a list of "common reasons for rejection" that include conditions or criteria which are not part of these basic requirements (statements beginning with (R) in the first column). Among them one finds the very encompassing condition "journal does not adhere to the Principles of Transparency and Best Practice in Scholarly Publishing". It can't be understood as applying only to the subset of "basic requirements", as the latter is listed next as another reason for rejection. By the way, this very unspecific reason is one the few used to justify rejection in the [list of journals removed from DOAJ](#) available on DOAJ website.

For each basic requirement for inclusion and/or reason for rejection, the second column of Table 10 describes the issues faced by non-indexed Canadian journals that would decide to apply. Individual journals concerned with each issue can be identified in the dataset.

Table 10
Basic standards for inclusion in DOAJ, and common reasons for rejection,
with issues for non-indexed Canadian journals considering to apply.

Basic standards for inclusion and common reasons for rejection (R)	Issues for Canadian non-indexed journals
One URL per site, linking to the page of the journal. No other service or product under that URL.	A few websites I visited host two different journals; a few others offer other services.
All content included in the application (including archives) must be in one place, not spread over various locations.	Most journals in Érudit (40/51) have also their own websites, sometimes with the same information and articles on both, sometimes with articles only on Érudit.
One URL for each article (HTML or PDF document); not one URL per issue.	Some journals publish only whole-issue PDFs; in rare cases, articles don't have exclusive pages (like in magazines).
Homepage with clear navigation with links to a Current Issue, Archive or Past Issues, Search, Browse, About page, Editorial Board and Contact.	This is included in the platform OJS (used by most journals). Some journal homepages don't have all these navigation links; some journals with whole-issue PDFs display info on the journal only there.
Detailed and comprehensive guidelines for authors.	A few journals (mainly proceedings) don't have author guidelines on their website.

Basic standards for inclusion and common reasons for rejection (R)	Issues for Canadian non-indexed journals
Information about charges (even if absent) to process or publish a paper.	Most non-commercial journals, and some commercial ones, don't mention fees.
At least one ISSN. (R) Unconfirmed ISSN. (R) Incomplete or incorrect ISSN information.	33 journals don't have an ISSN.
Must have published in the last two years. (R) Have ceased publication. (R) Haven't published anything in the last calendar year / for up to two years.	As of Jan. 2020, at least 20 journals hadn't published in 2018 and 2019.
A third of the content should consist of peer reviewed original research and/or review papers. Clinical reports must include the analysis of more than 3 cases. (R) Does not publish original research.	According to what is counted as a review paper, and because I didn't check clinical reports, some journals probably wouldn't qualify.
At least 5 peer reviewed original research and/or review papers per year*.	64 journals published less than 5 art. / year (not necessarily original research and/or review papers) between 2016 and 2018; 124 more published between 5 to 10 art. / year.
Name and affiliation of Editorial Board members publicly available on the Editorial Board page. An editor and an editorial board, except in Arts and Humanities. (R) Do not have an up-to-date, transparent editorial board.	A dozen journals don't mention an Editorial Board; a dozen more don't specify affiliations of Board members. Some journals don't have a clear / detailed Editorial Team structure.
Student journals must have an advisory board of which at least two members have a PhD or equivalent.	Half of student journals (54) have at least two such advisors**; 21 have only one.
The exact type of review must be stated clearly. Arts and Humanities only: editorial review using only two editors and no editorial board. (R) Do not perform effective peer review (or editorial review in Arts & Humanities).	Some journals only mention that they are peer-reviewed, without explanation. A few don't even mention it, nor if there is a reviewing process (though it may be inferred).
A Creative Commons licence, or an equivalent publisher-specific licence equivalent. (R) Use a definition of open access that is not the BOAI definition.	179 journals don't satisfy this condition.
Description of the terms of use and reuse by readers and authors, particularly if a Creative Commons licence is not used. A complete, detailed Open Access statement describing user rights. A short one is accepted, but ONLY in combination with a Creative Commons licensing statement.	See Section 5 for a discussion of copyright and licensing management.

4.2 Issues faced by non-indexed journals

From Table 10, one can enumerate the main issues faced by non-indexed journals, mostly in decreasing order of number of journals concerned.

1. Explicit mention if the journal charge publication fees or not.
2. A suitable user licence (Creative Commons or equivalent).

3. A minimal article output (5 research / review articles per year).
4. For student journals, at least 2 Ph.D.-holding advisors.
5. An ISSN.
6. Latest issue published in the two years preceding application to DOAJ.
7. An independent, well-structured website with easy navigation and individual article pages.
8. Detailed and complete info on editorial process (Editorial Board, peer-review, submission process).

I identified 231 journals (62 % of non-DOAJ-CA) that don't meet at least one of the requirements 2-6, and observed many (among them or not) that don't meet the first one, or would arguably fail to meet the last two.

Some of these issues are trivial (1, 5) or not really difficult to tackle (2, 4, 8), though some work would be required of the journal team. In particular, I see no reason why small, not-for-profit journals publishing under an all-rights-reserved regime could not switch to a CC licence.

The issue of website structure (7) would imply more work, and could mean for some journals to switch to a new platform. As to long publication delays (6), it may well be, as I suggest in [section 2.1](#), that most journals with no publication activity in the last two years have in fact ceased to publish.

The most problematic issue, concerning at least 66 journals but probably many more, is article output (3), as there is no easy way for a journal to significantly increase its output without lowering its standards, which means attracting more authors.

It's worth noting that DOAJ seem to use some leeway in the application of its criteria. I found among DOAJ-CA eight journals that, at least according to the information available on their website, wouldn't meet DOAJ standards of inclusion concerning article output, user rights, or PhD advisors (for student journals). There is also the case of the 14 *Érudit* journals indexed in DOAJ that have their own website, and thus may violate the condition of having "all the journal content [...] in one place and not spread over various locations".

Similarly, in DOAJ:

- Only one journal was removed since 2017 for not having published enough articles in the preceding year, even though close to 300 journals published less than five articles in total in 2018, and 900 between 5 and 10, making it easy to imagine that a few hundred don't meet the threshold of five review or research articles.
- Among the 130 journals with Editorial review (as opposed to external peer-review), accepted in principle only for HSS journals, one finds journals in all fields, including physical sciences and medicine.

One should thus remain cautious when trying to assess if a specific journal, in its current state, could or couldn't be accepted in DOAJ, or what exact changes it should make to become eligible.

Another dimension, not included in Table 10, is the eligibility to public funding, especially from programs supporting scholarly publishing and, in many cases, promoting open access, that could help journals implement the required changes. A good example is [Coalition Publica](#), a partnership between *Érudit* and PKP (developer of OJS), that offers among other services, "assistance meeting Directory of Open Access Journals (DOAJ) criteria". The problem here is that many non-indexed journals wouldn't be eligible to such funding, for two reasons.

- Though student journals are not excluded *per se*, many would probably fail to meet the criteria related to scholarly content and participation of researchers in the editorial process. For instance, to

be eligible to SSHR funding, journals must meet an annual research or review article threshold, and must not be “edited and published solely by students” (Government of Canada, 2018).

- Only Canadian-run journals (see [Section 2.3](#)) qualify for such support, meaning that 35 journals would be ineligible for this sole reason.

One can wonder though to what extent small student journals need to be indexed in DOAJ, as many (notably those run by undergraduates) accept only articles submitted by students from the university, or even from a given program or course. These journals could nevertheless find in DOAJ guidance and ideas for improving their practice, if so they wish.

5. CANADIAN OA JOURNALS MANAGEMENT OF COPYRIGHT

In principle, a journal must manage copyright. That means making decisions about various dimensions of copyright and describing them in a copyright policy. This policy should cover at least the three following areas:

- ownership of copyright and, when relevant, its transfer, or the exclusive transfer of some rights, from authors to journal;
- use rights of readers, ideally defined in a user licence (Creative Commons, notably);
- reuse rights of authors, if they are required to transfer or grant the journal all or some exclusive rights on their articles.

Managing copyright means also making the relevant elements of this policy easy to find and to understand by those to whom they apply, that is authors and readers.

Despite the availability of tools that facilitate this task (for instance Creative Commons licences and templates used in publishing platforms like OJS and Érudit), a majority of journal websites present more or less serious copyright management problems. These affect primarily non-DOAJ-CA journals, as DOAJ standards and best practice include a number of requirements and recommendations about copyright and licensing. I found nevertheless problems in a number of DOAJ-indexed journals. This is acknowledged by DOAJ’s Editor in Chief, who stated that “the issue of copyright and licensing ranks among one of the most difficult issues of open access publishing.” (Olijhoek, 2018), following by examples of erroneous or inconsistent statements found in DOAJ applications. I agree completely with Tom Olijhoek, adding that this suggests to me that small, most often volunteer-run journals don’t have the knowledge or resources needed to tackle this complex issue.

I present below an overview of Canadian OA journals copyright policies, followed by a discussion of the problems I found in their websites and articles. I must warn readers that because of the sometimes muddy copyright waters, one should remain cautious with the data I provide and their interpretation. Notably, I had to make choices or decisions based on what seemed most plausible (see Appendix A) in case of missing, incomplete or conflicting information (see [section 5.2](#)). This last problem affects a relatively low number of journals though: I found inconsistencies on user rights in 10 % of the journals, and on copyright ownership in 8 %.

Note. For the sake of this discussion, I use “journal” to designate the publishing entity, irrespective of the nature of the entity (company, society, organization, university) that effectively owns the journal and may be the copyright owner. Websites sometimes indicate in the © mention an entity such as a university research center that can’t legally be the copyright owner (the university is, in such a case).

5.1 Overview of copyright policies

User rights / licences

User rights are an important dimension of Open Access. Some OA definitions, notably that of the [Budapest Open Access Initiative](#) (BOAI) (Leslie Chan et al., 2002) include the provision of generous user rights. DOAJ requires that user rights be compliant with the BOAI definition, equating this with using any of the CC licences, or an equivalent publisher-drafted one, which it doesn't recommend as drafting a clear and legally sound licence is no easy task. After all, it is one of the main purposes of CC licences.

Naturally, as shown in Table 11, almost all journals in DOAJ-CA use a CC licence (90 %) or an equivalent (7 %). One notes that, DOAJ indexing criteria notwithstanding, three DOAJ-indexed journals are all-rights reserved, explicitly or implicitly (no trace of user licence found in the website).

Table 11
User rights and licences.

	All-CA	Non-DOAJ-CA	DOAJ-CA	DOAJ-HIC
Number of journals	519	372	147	5 987
All rights reserved	33 %	45 %	2,0 %	–
Non-DOAJ-compliant user licence	1,9 %	2,4 %	0,7 %	–
DOAJ-compliant licence (CC or equiv.)	65 %	52 %	97 %	100 %
Publisher's own licence	4 %	3 %	6 %	4 %
CC licence	61 %	49 %	90 %	96 %
CC BY*	49 %	47 %	51 %	44 %
CC BY-SA	3,0 %	3,0 %	3,0 %	2,5 %
CC BY-ND	2,0 %	1,2 %	3,0 %	1,3 %
CC BY-NC	15 %	16 %	13 %	19 %
CC BY-NC-SA	5,0 %	4,7 %	5,3 %	3,5 %
CC BY-NC-ND	26 %	28 %	25 %	30 %
CC with NC restriction	46 %	49 %	43 %	53 %
CC with ND restriction	28 %	29 %	28 %	32 %
HSS journals with CC BY	47 %	48 %	45 %	37 %
HSS journals with CC with ND restriction	32 %	29 %	36 %	38 %

* % in this row and the next ones are of journals with a known CC licence.

One can argue that some of the CC licences are not compliant with the BOAI definition (Couture, 2019). According to this definition, all uses for lawful purposes must be allowed, and the only role of copyright should be to give authors the right of attribution and control over the integrity of their work (Leslie Chan et al., 2002). This suggests that restrictions are to be avoided, as modifying a work or using it commercially is certainly lawful from a copyright perspective. Indeed, DOAJ, in line with the general tendency in the OA world, indicates a preference for the least restrictive CC licence, CC BY, making it a condition for the DOAJ Seal.

This preference is found in the choices made by journals using a CC licence, both in DOAJ-CA non-DOAJ-CA: CC BY is the most widely used, about half of the time. The other journals use any of the other five licences, but almost always with the -NC restriction. One notes that there is not much difference in the distribution of the various CC licences among the four groups of journals.

An interesting observation is the fact that the -ND restriction is chosen by a modest share of journals,

particularly in non-DOAJ-CA (29 %), and not more in HSS, considering the recent discussions on the importance of this restriction (Britt Holbrook, 2018) for this sector, in the context of the [Plan S](#) proposal.

Ownership of copyright

More and more researchers, who didn't traditionally care much about copyright, have become aware of the importance of copyright ownership, realizing the extent of the control that comes with it, and the losses associated with its transfer. DOAJ allows journals to choose between letting authors keep all their rights, and requiring them to grant the journal some or all rights, by means of a transfer of copyright or an exclusive licence. Here again, DOAJ declares a preference, author ownership, and makes it a condition for the Seal.

DOAJ-CA journals and non-DOAJ-CA journals with user rights (Table 12) do follow closely DOAJ preference, with about 85 % of journals with known copyright ownership letting authors keep their copyright, and only around 20 % acquiring some exclusive rights.

Table 12

Ownership of copyright, with comparisons between journals, with or without user rights, indexed or not in DOAJ.

	All-CA	Non-DOAJ-CA			DOAJ-CA	DOAJ-HIC
		All rights reserved	With user rights	Total		
Number of journals	519	170	202	372	147	5 987
Ownership specified	446 (86 %)	121 (71 %)	178 (88 %)	299 (80 %)	–	–
Authors own ©*	319 (72 %)	39 (32 %)	157 (88 %)	196 (66 %)	123 (84 %)	60 %
Exclusive licence to journal**	28 (6 %)	10 (8 %)	7 (4 %)	17 (6 %)	11 (7 %)	–
Journal owns ©	124 (28 %)	81 (67 %)	21 (12 %)	102 (34 %)	22 (15 %)	40 %
Journal owns all or some exclusive rights	155 (35 %)	92 (76 %)	28 (16 %)	120 (40 %)	35 (24 %)	–

* % in this row and the next ones are of journals with known ownership.

** Included in the preceding.

This preference doesn't show strongly though in DOAJ-HIC, where 40 % of journals own the copyright, to which one should add an unknown share of journals letting authors keep the copyright but acquiring exclusive rights through a publishing licence. These licences may cover some rights (commercial, most of the time) or all of them, in which case authors keep only a "nominal" copyright, finding themselves in practice in the same situation as if they had transferred their copyright. This modality is notably used by the large commercial publishers.

The same is observed among non-DOAJ-CA journals publishing under the all-rights reserved regime, where an even larger share of journals acquire exclusive rights (76 % of those with known copyright ownership). These rights allow them to monetize future reuses of their articles, but one can wonder though to what extent small, university- or society-based journals (which constitute 94 % of non-DOAJ-CA) can expect significant revenues from the reuse of articles, and thus really need to acquire exclusive rights.

Note that these figures are a bit approximate due to the substantial number of journals, all in non-DOAJ-CA, that don't specify copyright ownership (73 journals, 20 % of non-DOAJ-CA).

Author reuse rights

The last issue I investigated is author reuse rights. This issue is difficult to describe quantitatively, due to the variety of the situations and to the incomplete, unclear or inconsistent information found in the websites of many journals (see [section 5.2](#)).

First, let's point out that only journals acquiring some exclusive rights really need to include author reuse rights in their copyright policy. An exception would be the so-called "exclusive right of first publication" stated in many policies, which in my opinion is more a condition of publication, part of the publishing agreement, than a copyright matter.

Second, among journals acquiring all or some exclusive rights, one must distinguish those allowing user rights (through a user licence, CC or other) from those publishing under the all-rights-reserved regime.

- When there is a user licence, authors should normally have at least the rights granted by the licence, to which the journal can add some author-specific permissions, normally related to the licence restrictions (ND or NC for CC licences). With CC BY, or an equivalent user licence, this is not much relevant, as the only meaningful permissions would be the right to distribute the work under a different licence (or to allow someone to do it), and the right to forfeit the attribution requirement.

Nevertheless, some journals limit author reuse rights to less than what the user licence allows. It's difficult to understand why a journal would be less generous to its authors than to its readers, and it's not clear if the private author-journal publishing agreement trumps the user licence. One would tend to think that these situations are not deliberate, but might be due to a lack of proficiency in copyright, or to mere oversight. For instance, an all-rights-reserved journal starting to use a CC licence could forget to adapt the parts of its policy concerning author reuse rights that made sense before.

- When there is no user licence, absent any explicit permission, authors and readers alike have no more rights than what is provided by jurisdiction-specific exemptions, like fair dealing in Canada, rights that are quite limited and hard to circumscribe.

As seen in Table 13, among the 155 journals that acquire some or all exclusive rights, at least according to information available on their websites (even as succinct as a mere © Journal mention), only a third (52 journals) allow authors meaningful reuse rights, that is more generous than either user rights or basic uses (for instance, downloading or printing a personal copy) that don't even require permission. These "meaningful" rights are sometimes unlimited, but more often limited, generally to non-commercial and/or educational uses. Unsurprisingly, journals with a user licence tend to be also more generous to authors: not only do they rarely acquire any exclusive right, as seen before, but those who do (32 %) are more prone to allow authors unlimited reuse rights, with the cautionary note that this conclusion concerns a small number of journals.

Table 13
Author reuse rights, with comparisons as in Table 12.

	All-CA	Non-DOAJ-CA		DOAJ-CA
		All rights reserved	With user rights	
Number of journals	519	170	202	147
Journal owns all / some exclusive rights*	155 (34 %)	92 (75 %)	28 (16 %)	35 (24 %)
No author reuse rights (implicit or explicit)**	97 (63 %)	65 (71 %)	18 (64 %)	14 (40 %)
Reuse rights more limited than user licence	4 (3 %)	–	1 (4 %)	3 (9 %)
Effective author reuse rights	52 (34 %)	27 (29 %)	9 (32 %)	16 (46 %)
Unlimited reuse rights	16 (10 %)	3 (3 %)	5 (18 %)	8 (23 %)
Some reuse rights	36 (24 %)	24 (26 %)	4 (14 %)	8 (23 %)

* % in this row are of journals with known ownership.

** % in this row and the next ones are of journals owning all / some exclusive rights.

5.2 Problems with copyright management in non-Érudit journals

I found in journal websites three main types of problems regarding copyright management:

- incomplete or missing information;
- information not displayed where it could be easily found by those to which it applies;
- inconsistencies /conflicting information.

I also stumbled from time to time on unclear or legally dubious statements or explanations. I won't describe these here, but information on them can be found in the in the "Comments on copyright" section of the dataset.

Note that I treat separately ([section 5.3](#)) the copyright management issues for the 51 journals hosted by Érudit. As mentioned in [section 4](#) (Table 10) most of these journals have also their own websites, that may contain information on copyright. The data and analyses in this section are thus limited to the 468 non-Érudit journals (131 in DOAJ).

Incomplete or missing information

As it's a condition for DOAJ indexation (see Table 10), the websites of DOAJ-CA journals normally contain basic information on copyright, specifying minimally ownership and user rights. By contrast, 14 % of non-DOAJ-CA journals (46 titles) don't mention copyright at all, not even by displaying the minimal © mention (Table 14). This doesn't mean they renounce to enforce copyright: absent any mention to the contrary, any original work is protected by copyright. The default protection is the all-rights-reserved regime, which means that permission from the copyright owner is required to do anything beyond reading the work and (in most countries) keeping a copy for personal use, plus some other limited uses covered by country-specific exemptions, like fair dealing in Canada. However, one shouldn't assume readers will interpret correctly this lack of information.

Table 14

Problems in non-Érudit journals with incomplete, missing or inadequately located information on copyright ownership and user rights, with comparisons as in Table 12.

	All-CA	Non-DOAJ-CA			DOAJ-CA
		All rights reserved	With user rights	Total	
Number of journals	468	146	191	337	131
No mention of copyright anywhere	46 (10 %)	46 (32 %)	–	46 (14 %)	–
No mention of owner anywhere	77 (16 %)	48 (33 %)	22 (12 %)	70 (21 %)	7 (5 %)
... in PDF* or article page	166 (35 %)	74 (51 %)	60 (31 %)	134 (40 %)	32 (24 %)
... in PDF	298 (66 %)	94 (68 %)	136 (73 %)	230 (71 %)	68 (53 %)
No mention of user rights anywhere	105 (22 %)	104 (71 %)	–	104 (31 %)	1 (1 %)
... in PDF or article page	175 (37 %)	114 (78 %)	43 (23 %)	157 (47 %)	18 (14 %)
... in PDF	308 (68 %)	122 (88 %)	126 (67 %)	248 (76 %)	60 (47 %)
No mention of owner or user rights in PDF or article page	114 (24 %)	70 (48 %)	30 (16 %)	100 (30 %)	14 (11 %)

* PDF of individual article or, if no such PDF is provided, PDF of whole issue.

Other journals, including DOAJ-indexed ones, specify only ownership (59 titles) or user rights (31 titles) but not both. Thus, for 77 journals, prospective authors can't know if they will keep their copyright. This includes 7 DOAJ-indexed journals where the info can only be found in DOAJ. The problem here is that authors considering to submit to these journals don't know what will become of their rights: will they keep them, or be asked to transfer all or some of them to the journal?

The other journals specify the copyright owner, often by putting after the © symbol. If this is the only indication about ownership, it's not clear what it means exactly, especially if, as is often the case, it's displayed only in the footer of all or some journal web pages. Does it apply to all the content of the journal, articles included, or only to the journal website pages where it appears? What about table of contents or article pages? Only a couple of journals with this kind of footer specify to what content exactly applies the © notice.

Furthermore, if what follows the © symbol is the name of the journal and one concludes, for instance when it's displayed in the article PDF, that it applies to articles, this means that authors have to transfer their copyright. This must be done in writing, so that authors will have to sign a copyright agreement at some time. But even when the authors keep their copyright, there is still the possibility that they have to grant the journal some exclusive rights, which should also be done in writing. However, many journals owning the copyright, or some exclusive rights, don't say anything in their website about this copyright transfer or exclusive publication licence. Some allude to the existence of a copyright agreement, that would presumably formalize the transfer, but don't make it available or describe it.

More detailed explanations on subjects like the rationale of the journal's decision to reserve all rights or offer a user licence, the meaning and scope of the licence, the conditions of reuse by readers and by authors, in fact what could be called the journal copyright policy, are normally found in a dedicated Copyright section (which is standard in the OJS platform, see [section 5.3](#)). However, some journals, including obviously all those with no copyright information whatsoever, omit this section. In others, one finds there information or explanations having nothing to do with copyright, for instance a general Open Access statement.

Journals publishing under an all-rights reserved regime are notably silent in this regard: among these 146 journals, all in non-DOAJ-CA, 104 were classified as such by default, absent any information on user rights.

Information not displayed in adequate locations

Information on copyright can be found in various parts of the journal website: the Home page, the footer of all or some pages, article pages (with an abstract and, in some cases, the full article) and PDFs (of individual articles or whole issue). As mentioned above, these often display the bare essential, like the copyright owner, along with an all-rights-reserved mention or a CC licence logo. More detailed explanations on subjects like the rationale of the journal's decision to reserve all rights or offer a user licence, the meaning of the licence, the conditions of reuse by readers and by authors (for purposes not allowed by the user licence), are normally found in a dedicated page or section of a page. This page is sometimes easy to find, for instance through a prominently displayed link with "copyright" in its label.

In many journals however, things are not so straightforward: one has often to check various pages, for instance Author instructions/guidelines, About or Submissions (notably in OJS-hosted journals). These locations are fine for information aimed at authors, like copyright ownership and reuse permissions in case of transfer, but certainly less so for information aimed at readers, notably on user rights. Readers will normally limit their visit to tables of contents, article pages (with abstracts) or, especially if they found an article with Google Scholar, PDFs of articles. They will download articles they find potentially useful, keeping them for later, maybe sharing them privately with colleagues. But once downloaded,

these documents have literally a life of their own, with no link anymore to the journal website where would-be users could find information on what they are allowed to do.

Here lies in my opinion one of the most important problems related to copyright management: no information on user rights, even a minimal “all-rights-reserved” mention, can be found in the PDFs of 68 % of the journals (Table 14). Under the all-rights reserved regime, this is not technically wrong but, as mentioned above, it would be better not to assume readers will interpret correctly this absence of information on reuse rights.

The 322 journals that do grant users some rights should certainly make it visible to readers. DOAJ-CA journals do fare a little better than the average, with “only” 47 % omitting user rights in the PDFs, the figure reaching 88 % in non-DOAJ-CA.

The identity of the copyright owner is absent in the same proportion in the PDFs. This information is however less crucial to readers, though it is required to know where requests for restricted uses must be sent. As discussed above, prospective authors will look for this information in sections like Submissions and Author guidelines, and will be able to find it in the vast majority of journals.

In the worst-case scenario, observed in 25 % of the journals, information on user rights and on ownership are absent in both the PDF and the article page. This includes 14 DOAJ-indexed journals, even if DOAJ [guidelines on copyright](#) stress the importance of displaying the licence in at least one, and preferably all of those locations:

If you publish HTML abstracts, full text HTML or PDFs of your articles, you should display the license in them, using the code from Step 2. (Displaying a logo in the footer of the site is not adequate.) [...] We recommend that you add licensing information to all versions of your content.

Inconsistencies

The last type of copyright and licensing problem I found is inconsistencies (Table 15) , which I detected in 106 journals (23 % of non-Érudit titles). Somewhat unexpectedly, inconsistencies were more frequent in DOAJ-CA (34 %) than in non-DOAJ-CA (18 %). This is certainly the result, at least in part, of the greater occurrence of missing or incomplete information in non-DOAJ-CA, which reduces the risk of inconsistency.

Table 15
Inconsistencies in copyright information in non-Érudit journals,
with comparisons between DOAJ-indexed and -non-indexed journals.

	All-CA	Non-DOAJ-CA	DOAJ-CA
Journals with inconsistencies	106 (23 %)	61 (18 %)	45 (34 %)
Inconsistencies involving footers	31 (7 %)	17 (5 %)	14 (11 %)
Ownership	23 (5 %)	12 (4 %)	11 (8 %)
User rights	12 (3 %)	8 (2 %)	4 (3 %)
Other inconsistencies	75 (16 %)	44 (13 %)	31 (24 %)
Ownership	40 (9 %)	23 (7 %)	17 (13 %)
User rights	43 (9 %)	25 (7 %)	18 (14 %)

One type of inconsistency, found in 31 journals, can be said to be minor: it’s when it’s due to information displayed in the website footer. When there is conflicting information in the same page, for instance a CC licence logo in a page with an all-rights-reserved mention in its footer, readers will probably conclude that the former applies. This doesn’t necessarily constitutes an inconsistency from a

legal perspective, as the conditions applying to the pages describing the journal may well be different from those that apply to articles. Furthermore, one can argue that a copyright on the journal issue, as a collection of works, may coexist with a distinct copyright on individual articles. But such subtleties certainly elude the average author or reader. Things are most problematic if the information on user rights in the footer conflicts with what is stated in another page, most likely Submissions, which only authors (actual or potential) will normally consult. Fortunately, less than half of inconsistencies involving footers concern user rights.

The second type of inconsistency, found in 75 journals (16 % of all-CA), arises when the conflicting information doesn't involve the footer. It can be either in one place, for instance an all-rights-reserved immediately followed by a CC licence logo, or in different locations, either in the website or the article PDF. A majority of these inconsistencies (43) concern user rights, for instance different CC licences (up to four) displayed in various locations.

Finally, it's worth mentioning that I found discrepancies in basic copyright information (ownership and licence) between DOAJ dataset and the journal website for 30 titles (23 % of DOAJ-CA journals not in Érudit). Two thirds of these concern ownership, and one third the user licence.

Journals provide this information to DOAJ when they apply, and DOAJ verifies the accuracy of the information, asking URLs for (1) licence terms, (2) copyright information and (3) publishing rights information. There can be any number of reasons for these discrepancies. For instance, since it (re)applied (five years ago at most), a journal may have modified its copyright policy without updating its profile in DOAJ, or changed the way it displays copyright information. One has to keep in mind though that no system or process is 100 % error-free, so that finding discrepancies on the exact user licence in about 8 % of DOAJ-CA journals is not really surprising.

5.3 Copyright management and journals hosting platforms

Most retained journals (70 %) are hosted on one of the three following publishing platforms, by decreasing order of number of journals: Open Journal System, Érudit, and OpenEdition. These platforms offer a standard interface, as well as templates or standard texts that can be reused and adapted to the choices and needs of the journal. They thus have the potential to avoid some of the pitfalls mentioned in [section 5.2](#). The other journals are hosted on other platforms, specialized or not, like Digital Commons (BePress), WordPress, Weebly and SPIP, or use custom websites.

Here are some issues related to each of the three main platforms.

Open Journal Systems (OJS)

Note. I hope I don't make any basic error in the following, as I have no direct knowledge of OJS. What I know and understand about it comes entirely from my exploration of the websites of the 326 journals (63 % of all-CA, mainly published by universities or societies outside Québec), that use this platform.

In the standard structure of OJS, there is a section named Copyright Notice in Submissions, which may be a page or a section of the About page. One often finds there, particularly in journals with a CC licence, clear and detailed explanations about ownership, user rights and author reuse rights, usually in the form of a standard text. Here is one that is reproduced, in whole or in part, in many journals with a CC licence.

Authors who publish with [Journal name] agree to the following terms:

Authors retain copyright and grant [Journal name] right of first publication with the work simultaneously licensed under a Creative Commons Attribution License that allows others to share the work with an acknowledgement of the work's authorship and initial publication in [Journal name].

Authors are able to enter into separate, additional contractual arrangements for the non-exclusive distribution of the [Journal name]'s published version of the work (e.g., post it to an institutional repository or publish it in a book), with an acknowledgement of its initial publication in [Journal name].

Authors are permitted and encouraged to post their work online (e.g., in institutional repositories or on their website) prior to and during the submission process, as it can lead to productive exchanges, as well as earlier and greater citation of published work (See The Effect of Open Access).

Note that the two last paragraphs don't confer any supplementary rights to authors than what can be inferred from the first part of the license. But it's certainly useful to state them explicitly, as this is probably be far from obvious to an author not versed in copyright matters.

Here is another, less elaborate standard text found in some OJS journals.

Copyright for articles published in this journal is retained by the authors, with first publication rights granted to [Journal name]. By virtue of their appearance in this open access journal, articles are free to be used, with proper attribution, in educational and other non-commercial settings.

This one, which I consider as a DOAJ-compliant user licence, more or less equivalent to CC BY-NC, is less explicit. For instance, authors could well believe that they have no more reuse permissions than what is described in the second sentence, that can be interpreted as both (1) a user licence, and (2) absent any further information (such as what is found in a copyright agreement), the granting of exclusive commercial rights to the journal.

Some OJS journals omit the Copyright Notice section; others display there incomplete information, like a sole © mention with nothing on user or author reuse rights.

There seems to be in OJS an optional functionality allowing to display the Copyright notice in the article page. This avoids one the problems discussed in [section 5.2](#) (no mention of owner or user rights in the article page), that affects 175 journals (42 % of journals with article pages). The only caveat here is that a copyright notice such as the one quoted above is not aimed at readers who, seeing all the statements beginning by "Authors", could well think at first glance that they are not concerned with it. Fortunately, there seems to be another functionality allowing to display prominently, just before this often elaborate copyright notice, both a © mention and a CC logo. However, less than 100 of the 326 OJS journals use this functionality, and not all of them add the prominent reader-friendly information. I don't know if it's by choice, by oversight, or due to a different OJS version, but this practice should be encouraged.

Finally, it seems that in OJS, the article PDFs are provided as produced by the journal, so that the problem of missing information in the PDFs is not addressed at all. This explains in part why the share of journals with problems in copyright management, for instance missing information on ownership or conflicting information about user rights, is similar in OJS journals and all-CA.

Érudit

Note. As mention in the introduction, I'm not an independent observer here, as I'm Associate Editor of a journal hosted on Érudit, and I discussed a few times copyright issues with the Érudit team, notifying them of the problems I detected and making suggestions to improve the situation.

There are 51 journals in Érudit, all Canadian-run (they use a definition similar to that of Canadian funding agencies), of which 16 are indexed in DOAJ. As of January 2020, close to more 20 journals, most of them included in this study as non-Érudit journals, are being added to the platform.

For every journal, Érudit displays basic, succinct information on copyright ownership and user rights (© mentions, CC logos) in tables of contents, article pages and a standard cover page added on top of the journal-provided PDF. For part of the journals, more detailed information on copyright is provided in the About or Policies page. There is also a platform-wide [Terms and Conditions](#) page with a section on user rights.

As mentioned before, most journals on Érudit have also their own website, that may use one of the other platforms discussed here. These websites contain at least general information, often about submissions. A slight majority (60 %) host the articles, that are always also hosted on Érudit. This overlap increases the risk of conflicting information, while making much more difficult the description of copyright management. I will thus restrict my description to some general observations.

Not taking into account the general Terms and Conditions, which state that articles are published under an all-rights-reserved regime, and the tables of contents that, irrespective of actual copyright ownership on articles, systematically indicate “© [Journal] all-rights-reserved”, which can be technically correct, as discussed above, I found in half of Érudit journals conflicting information either between different parts of Érudit or between Érudit and the journal website.

An upside here is that most of these problems could be solved centrally by Érudit, with the significant advantage that all article pages and PDFs would contain information on copyright, avoiding a major problem in copyright management. The issue is then to ensure consistency, both with the journal policy and between the various locations where copyright information is displayed.

OpenEdition

OpenEdition, a French platform, is used by 13 journals (7 in DOAJ). The location of copyright information is less standardized than in OJS or Érudit; it may be found in any of the following sections: Mentions légales, Politiques/directives de publication (*Publishing policies*), Consignes aux auteurs, Directives aux auteurs, Présentation des manuscrits (*Presentation of manuscripts*). The information is also often very succinct, for instance only the name of the Creative Commons licence.

Like Érudit, OpenEdition adds a cover page to the PDF provided by the journal, but with sometimes no or incomplete information on ownership or user rights. Note that I could just check the PDFs for half of the journals, as the others use a so-called freemium model, making freely available only the HTML version of the articles. I found no inconsistency about copyright in these journals, but here again the scarcity of information reduces the risk of inconsistency.

CONCLUSION

Drawing from various sources, and visiting close to a thousand journal websites, I identified more than 500 **active, legitimate, Canadian, Open Access scholarly journals**, from which less than a third are indexed in DOAJ. These 519 journals were retained on the basis of inclusive definitions of each of these five terms. I discussed extensively each of these definitions, showing that more restrictive, though reasonable definitions could reduce this number to about 200. More than half of the difference would result from adopting the DOAJ definition of OA, based upon the Budapest Open Access Initiative, that requires a Creative-Commons-like user licence.

I visited the websites of all retained journals to collect a host of data and information, notably on copyright. This allowed me to draw a general portrait of Canadian OA journals, making two comparisons (1) between DOAJ-indexed and non-indexed Canadian journals and (2) between DOAJ-indexed Canadian journals and the subset of DOAJ journals from high-income countries. As DOAJ indexing is becoming a norm to identify quality journals following best practices, I discussed the issues facing non-indexed

journals would if they wanted to apply to DOAJ. Finally, I investigated in details Canadian OA journals copyright policies, and the way they display copyright information relevant to authors and to users.

In a nutshell, Canadian OA journals have a mean and median annual article output of 21 and 12, respectively, for a total of about 10 600 articles in 2018, a bit less than half in journals indexed in DOAJ. Compared to the subset of DOAJ journals from high-income countries, Canadian DOAJ-indexed journals are more likely small-output, no-fee, university or society-published journals in the Humanities and Social Sciences sector (HSS). Non-DOAJ-indexed journals follow this same pattern, in a more pronounced way. A surprising result (for me at least) is that one-fourth of Canadian OA journals (124 journals, with 8 indexed in DOAJ), are run by students, undergraduate or graduate, often with the participation of faculty.

I consider that DOAJ indexation, certainly very important for fee-charging journals that want to avoid being suspected of deceptive behaviour, would benefit all journals, as it helps, or forces them to improve their practice in all regards. In their current state, a fair, if not large majority of non-indexed journals don't meet DOAJ "standards for inclusion". For many, the required changes would not be hard to make (I include here choosing to use a Creative Commons licence). For some, that could mean significant work, from adding a lot of information to completely redesigning their website. Ongoing initiatives, like coalition PubliCA, could help them achieve these tasks.

As to copyright policies, I observed on many accounts a striking difference between DOAJ-indexed and non-DOAJ-indexed journals, as the former have to meet very specific requirements on user rights and are encouraged to be generous both towards authors and users. Non-DOAJ-indexed journals are much more prone to acquire exclusive rights and to restrict both author and user rights.

Finally, as was observed by the people at DOAJ, copyright is often poorly managed in small OA journals, which is not surprising considering the complexity of the matter. I found in a majority of journals, DOAJ-indexed or not, problems with the information on copyright. This information is often incomplete, not adequately located or inconsistent. Explanations are sometimes unclear or confusing. The dataset provided with this report includes specific information and comments on copyright and its management for every journal. It is in fact my hope that this study could help both individual journals and organizations supporting them to identify and find solutions to the issues they face, notably on DOAJ indexing and copyright.

It's important to remember that the many quantitative results in this study. Obviously, one should remain cautious when interpreting them. No sampling was used, neither in this study nor in that of (Crawford, 2019), so statistical significance is not at issue here, but one has to remember that I had to make assumptions, notably regarding the above-mentioned definitions, and judgment calls when applying them to specific cases. I could have reflected these uncertainties by rounding-off the numbers displayed in the tables, for instance to the next ten or twenty for numbers over 100, but that would have caused its own problems (rows or columns not adding up). I did though rounded-off all percentages to unity (except very small ones). One must also take into account that the "objects" I measured are in part moving targets: journal websites may have changed over the course of my data collection, journals cease to publish, new ones are started. I certainly made some isolated errors also, although I went a long ride to cross-verify or double-check all data, information (notably about copyright) and calculation.

One must also remember that all these results apply to the specific set of journals meeting the criteria and conditions associated with the choices I made when crafting the definition of an active, legitimate, Canadian, Open Access scholarly journal. Other choices could obviously have been made, with different results and, for choices affecting a substantial number of journals, a possibly different portrait. I must

point out thought that I verified the effect of perhaps the most debatable of these choices (including most student journals), and found no difference in the general.

With these caveats, I'm confident that my results are trustworthy and accurate, and that both the general portrait I draw and the significant differences I observed (and discuss) are well-founded. I will welcome any suggestion as to erroneous or debatable data or information in my dataset, available with this report.

An important issue that was just touched upon here is that of deceptive publishers. In his Gray OA study (Crawford, 2017) identified over 200 fee-charging, supposedly Canadian journals not indexed in DOAJ. Canada was the third country in terms of article output, with 8 000 articles in 2016. This is just a bit less than the 9 000 published that same year by all the (legitimate) journals retained for this study. It would be interesting and to investigate more deeply this situation.

Also, studies similar to this one, but for other countries, high-income or not, would be welcome to further investigate the challenges and obstacles small journals face, in different contexts, in relation to DOAJ indexing. Finally, the phenomenon of student journals, which form a substantial part of the journals I retained, should be studied more in depth, as it raises many issues, none the least being what we mean by a scholarly journal.

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APPENDIX A – METHODOLOGICAL NOTES

Data / information collection

The first step was to collect the largest number of potential titles, from a variety of sources. I started with four official, curated lists of OA journals, either Canadian or allowing country filtering: DOAJ, CRKN, Érudit, and ROAD. Then I searched for, and visited pages listing journals hosted in major Canadian universities (35 in total), as well as those of a few specialized organizations (CALJ, CISP, CSP, Mir@bel). I also added a couple of journals I knew or had found serendipitously.

For each journal, I collected (from my sources or the website) information on the following characteristics.

1. ISSN (ISSN search engine used when not found on journal website)
2. URL
3. Publisher / institution / society
4. Sector STEM, BioMed, HSS (as in Crawford) or General. Crawford put in STEM or HSS about 400 journals with subjects Other science and Miscellany, respectively. I checked them in DOAJ, and visited the websites when required; this made me reclassify under General a third of them. This is to be seen as a lower limit, as it's highly possible that some journals in STEM or BioMed, with other subjects, could also be classified in General. Examining all 12 000+ journals to that effect was not feasible though.
5. Type of publisher (as in Crawford: university, society/government, OA or traditional publisher)
6. Number of articles published in 2016, 2017 and 2018
7. For the same period, years with single / multiple / no issues
8. Year of most recent issue
9. Termination or change of status
10. Platform
11. Editorial Team members status and (for non-student journals) country of affiliation
12. Peer-review, and editorial process in general
13. Type of content and share of research articles + reviews (book, literature)

I gathered the information found in my various sources, plus the Canadian section of Crawford's GOAJ 2013-2018 dataset, correcting / completing it when needed, and the DOAJ dataset as of September 2, 2019. I collected directly on journal websites the information required to identify Canadian-run journals and investigate copyright matters, including for DOAJ-indexed journals, even if DOAJ provides part of this information (ownership and user rights). In some cases, due to incomplete or missing information on the website (mostly affiliations of Editorial Board members), I used a Google search.

Article output

For the article output, I counted manually all types of "articles", meaning texts with a title and author and, generally, an individual file. In the course of this study, apart from the ubiquitous research article, I encountered many categories of articles, some I didn't know existed or could be found in a scholarly journal. Many journals are very explicit as to which type of content is peer-reviewed and which isn't; some indicate that peer-review applies to all content, even poetry. However, I didn't use this information considering that DOAJ accepts journals with editorial review (at least in HSS), a process that many journals won't describe as peer-review. I tended thus to include all "articles", with the following few exceptions.

Fiction (short stories, poetry) and **artwork**. While being subject to an acceptance decision by the Editorial Board, I don't think one can consider these works as scholarly.

Editorials. I excluded editorials that seemed to consist of welcoming words from the Editor in Chief, or short factual presentations of the journal issue, while retaining substantial editorials, like introductions to special issues. However, I can't pretend to have been always consistent in making this distinction. With hindsight, I realize that I should probably have either excluded or included all editorials.

Articles published in two or more languages. I counted only once articles published in more than one language (generally English and French). Similarly, when the same exact issues were published in two titles, one in each language (with different ISSNs), only one journal was retained and included in the article count. There are only two such journals among those I retained: *Education Review / Revue d'éducation* and *Health Promotion and Chronic Disease Prevention in Canada / Promotion de la santé et prévention des maladies chroniques au Canada*.

The main consequence of this uncertainty is a slight inconsistency between the article counts for non-DOAJ-indexed and DOAJ-indexed journals: I used for the latter the data from by Crawford, who faced the same issue, stating that he was "certain that some manual counts are off by one or two" (GOAJ, p. 183). I inadvertently redid some of Crawford's article counts, and found indeed small discrepancies of this size. I estimate that the resulting overall uncertainty amounts to no more than a few percent.

Sector and type of publisher

Again following Crawford, I classified publishers into five categories: university, society/government, exclusively-OA publisher, and traditional one, i.e. publisher with both print and OA journals. For both DOAJ-indexed and non-DOAJ-indexed journals, I relied upon information in the journal website, validating and correcting Crawford's data for the former. I often had to make judgment calls as, for instance, a journal associated with a society could often be considered "published" by the society, or a publisher (commercial or not).

Information on copyright

I collected information on: copyright ownership, user rights / licence, author reuse rights, noting where the relevant information could be found, and looking for inconsistencies. For information in the PDFs, I examined one research article in the latest issue. When faced with unclear or inconsistent information on ownership or user rights/licence, I chose the most plausible one, applying the following rules when applicable:

- I gave precedence to information in copyright / publication agreements (available only for some journals).
- I disregarded info in the website footer, which may or may not apply to articles (see [section 5.2](#)), if it conflicted with what was found elsewhere.
- In case of conflict between a CC licence and other info about user rights (for instance, an all-rights-reserved mention), I gave precedence to the CC licence.
- For DOAJ-indexed journals, in case of conflict in the info on ownership or user rights between DOAJ dataset and the journal website, I gave precedence to the latter, as it may well be more up to date. However, when there were also conflicts in the website itself, I gave precedence to DOAJ data.

APPENDIX B – ARTICLE OUTPUT DISTRIBUTIONS

The boxplot diagrams of Figure B-1 illustrate the distributions of the 3-year (2016-2018) average annual article output of the four main groups of journals discussed in the report. All distributions are skewed due to the presence of many outliers (values farther than 1,5 interquartile from the third quartile), that displace the mean (black squares) from the median (horizontal line inside the box). The DOAJ-CA and non-DOAJ-CA distributions are similarly skewed, with the mean located a little under the third quartile. The DOAJ-HIC distribution is more heavily skewed, thus the median is a much better measure for comparison with the other distributions.

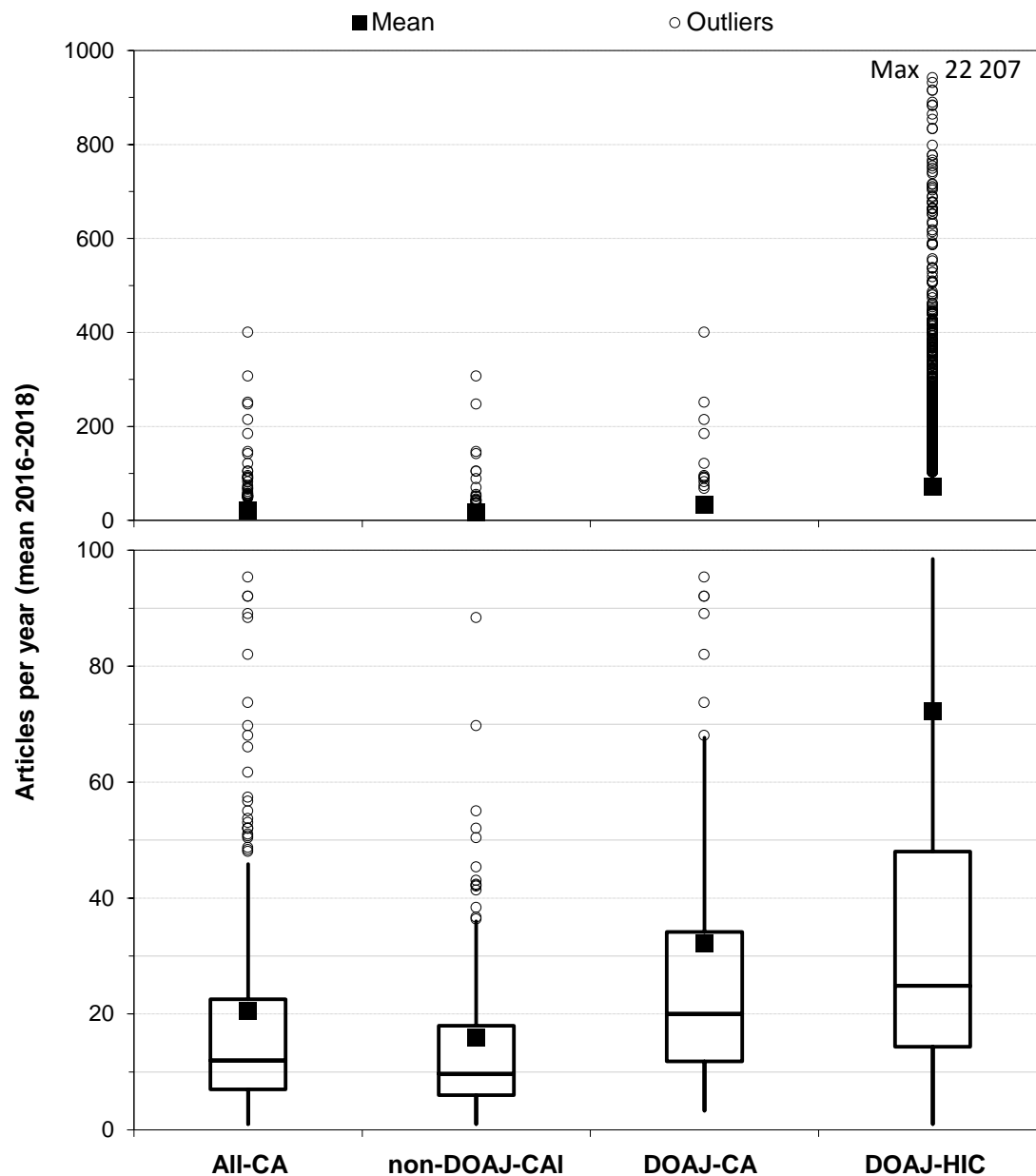


Figure B-1

Boxplot diagrams illustrating the distributions of the 3-year (2016-2018) average annual article output of the four main groups of journals discussed in the report.

APPENDIX C – ABOUT STUDENT JOURNALS

As discussed in [section 2.4](#), 124 students journals with evidence of peer-review have been retained. Other choices could have been made, resulting in different numbers. For instance, eliminating undergraduate journals would reduce it to 54; applying DOAJ criterion (two advisors with a Ph.D.), to 54 also (though not the same ones). My preferred criterion (active participation of researchers in editorial process), to 90. And so on.

To get an idea of what could be the effect of different choices on the main results presented in this report, I describe here in a global way what happens in the worst-case scenario: excluding all student journals, which reduces the number of all-CA journals to 395 (and non-DOAJ-CA to 256). For the record, I make available, along my dataset, a version of the tables mentioned below, corrected after removal of all student journals.

First, as student journals constitute only 5 % DOAJ-CA (compared to 31 % for non-DOAJ-CA), the consequences are negligible for DOAJ-CA. The effect on the other groups are the following.

- Mean and median article outputs (Table 4) are higher, but still much lower than in DOAJ-all in both DOAJ-CA and non-DOAJ-CA, with similar conclusions for shares of low- and high-article outputs and values by sector.
- The share of journals and articles with fees (Table 7) are higher in BioMed and STEM, reducing the difference between DOAJ-CA and non-DOAJ-CA, eliminating it for BioMed (journal-based). Results for HSS are almost unaffected, while mean fees (Table 8) are by definition unchanged (they are calculated for fee-charging journals).
- Results related to type of publisher and sector (Table 6), as well as copyright (Tables 9 and 11-15) are not significantly affected. All observed tendencies are still present, individual percentages varying by a few percent at most.

I thus may safely conclude that using different criteria to retain or exclude student journals wouldn't change significantly the portrait, tendencies and conclusions presented in this report.