

Case Report

Faculty Use of Open-Access Journals: A Case Study of Faculty Publications and Citing References at a California University

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Abstract: Many in the library world see open-access (OA) publishing as the way of the future, necessary to combat ever-rising costs, expand knowledge and information production, and level the playing field for researchers and students across the world. However, ingrained notions of the publishing process in academia, and concerns over OA journals' quality and costs often make researchers less enthusiastic. This study takes a close look at faculty habits at the college-department level by reviewing faculty publishing habits and cited references in those publications. Results show that the faculty in the Psychology Department at California State University, Los Angeles regularly publish at all OA levels, but utilize formal self-archiving less than what is found in their cited references. Furthermore, the department faculty cite fully OA (Gold) journals less than they publish in them.

Keywords: scholarly communication; publishing; authorship; open access; journals; publishing strategies; research habits

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1. Introduction

Facing soaring costs for subscription journals and seeking to democratize access to scholarly research, libraries and librarians increasingly support open-access (OA) models of publishing. However, some researchers are hesitant to publish in OA journals for various reasons, including concerns about quality, predatory journals, costs, or fear that fees make publishing more difficult [1]. These concerns may be more prevalent among arts, humanities, and social-sciences researchers [2–4]. Other researchers can be ambivalent about OA publishing, as Tenopir [3], and Rowley et al. [5] found, and may require encouragement to actively pursue OA publishing.

A modest number of previous studies sought to understand the nuances of researchers' views on OA to inform education and policy efforts. The present study takes a focused case-study approach by concentrating on the faculty in one disciplinary department with which the researcher liaises. The study has several aims. First, to understand California State University, Los Angeles (Cal State, LA, USA) Psychology faculty OA publishing habits; second, to examine the usage of OA journals among the Psychology faculty; and lastly, to inform future outreach and encourage further OA publishing. To do this, scholarly peer-reviewed journal articles authored by the faculty in the Psychology Department at Cal State LA and the cited references therein were reviewed for OA journals and articles. The review looks at the frequency in which faculty are publishing in or citing OA journals, and in which journals they publish and which they cite.

The frequency of faculty publishing and citation can demonstrate to hesitant faculty that their peers already trust OA scholarship and inform conversations on the overall viability of OA. Identifying specific OA journals that faculty and their peers are already using in their research may indicate a level of trust and appropriateness in those journals beyond the kind of information journal analytics and lists of legitimate or predatory journals can give.

2. Literature Review

2.1. History and Definitions of Open Access

Open access (OA) generally refers to publications or articles that are freely available online to readers without a subscription and typically include less restrictive copyright for reuse and distribution. Open-access journals were first published in the early 1990s as “niche” publications and have steadily gained popularity since [2]. A review of Scopus’ 2020 source list by the author showed that 16% percent of indexed journals are completely OA [6]. While OA publications are free to the reader, journal publishers sometimes shift the cost of production to authors to compensate for the lack of subscription fees. A review of the Directory of Open Access Journal’s (DOAJ) publicly available “Data Dump” pulled by the author in March 2021 [7] showed that 28% of journals listed in the DOAJ charge article-processing charges (APCs). While most OA journals follow similar editorial and peer-review processes as traditional journals, so-called “OA Megajournals” (e.g., PLOS) only look at the soundness of the methodology rather than other measures such as “perceived importance” [8].

The level of OA or how articles are made available for OA can take several forms, commonly referred to with a color code or other designations. While the exact definitions of each designation differ by publisher and organization, this article uses the categories in Table 1.

Table 1. Open-access (OA) level code and description.

Code	Description	Associated Terms
Gold+	Journals that only publish open-access articles whether authors pay APCs or not. Gold refers to both the journal as a whole and individual articles published within. Journals that do not charge APCs are sometimes called Diamond or Platinum.	<ul style="list-style-type: none"> Listed in DOAJ Gold OA Gold Libre OA Gratis OA
Bronze	Hybrid journals allow authors to publish as OA (typically for an APC), or provide temporary or permanent free access to some content. Individual articles within a hybrid journal that are OA are considered Bronze. Publishers often make content available after a year or two, which some call “Delayed OA”. Some publishers call articles “Gold” in hybrid journals if they include permissive copyright. However, this study groups all articles in hybrid journals as Bronze.	<ul style="list-style-type: none"> Hybrid Gold Hybrid Bronze Delayed OA
Green	The publisher or journal allows authors to make a published or accepted version of their article available in a digital repository, such as at the author’s institution. Journals may be from any access level, including traditional subscription journals, and individual self-archived articles are considered to be Green.	<ul style="list-style-type: none"> Self-archiving Institutional repositories

Note. Categories and definitions based on Piwowar et al. [9], Laakso and Björk [10], and Suber [11].

For this study, the categories are mutually exclusive, and each article is only marked as belonging to the highest level of access. For example, a Gold+ (fully OA) journal cannot by definition also be Bronze, which refers to journals that offer OA options but are not entirely OA. Furthermore, while authors who publish in Gold+ journals can often choose to also self-archive (Green), the primary mode of distribution is Gold+.

The standard for Green self-archiving is through institutional repositories or subject-specific repositories such as PubMed Central. There are various other options for self-archiving that may or may not be considered to be Green OA. Social archiving sites or

academic social networks (ASNs) such as ResearchGate and Academia.edu allow for authors to self-archive materials, and may include additional features for sharing and networking.

However, because these sites do not check the permissions of content posted there, many articles hosted on ASNs break with copyright permissions either because the publisher does not allow self-archiving or because the author mistakenly posts the wrong version. In 2017, Jamili found that 51.3% of a study sample of articles in ResearchGate were copyright-noncompliant [12]. For this reason, many studies analyzing the prevalence of OA do not include ASNs in the Green category. Nevertheless, a 2019 literature review of ASN research by Jordan concluded: “As an additional mode of open-access publishing, ASNs offer benefits in terms of speed and control in comparison to academic repositories, and enhanced reach and citations.” [13] (p. 11).

Preprint sites that allow for authors to post initial versions of research papers before peer review are not typically considered to be Green archiving. However, some are beginning to function as repositories for submitted or accepted versions of articles and accompanying data [14]. Two preprint sites that cater to psychology and social-sciences researchers are PsyArXiv.com [15] and SSRN.com (formally Social Science Research Network)[16]. While ASNs help researchers to disseminate work, make connections, and locate scholarship, the added value for researchers of posting to a preprint site is getting feedback prior to submission from a large pool of other researchers [17].

2.2. Author Publishing Considerations

The old adage “publish or perish” might well be updated to say “publish in the right journal or perish.” The pressure of the tenure process and the drive for prestige make choosing where to publish research a vital consideration. With this in mind, the Publication Manual of the American Psychological Association [18] devotes a section of the book to this task. The book recommends that researchers seeking to publish to look to the journals that they regularly cite, to reference lists of similar research studies, and to ask coauthors and colleagues for recommendations to generate a pool of potential candidates. It emphasizes two attributes in selection, appropriateness and prestige, with appropriateness prioritized in making a final decision. The goal of publication, they say, is fundamentally to share research with others in the field.

Overall, previous studies show that individual researchers rank these same attributes (appropriateness and prestige) the highest, along with quality peer review, speed of review and publication, and impact or readership when deciding where to publish [3,5,19,20]. These findings hold true for different categories of authors, including early-career researchers. Nicholas et al. [1] conducted 116 in depth interviews with early-career researchers from seven countries in Asia, Europe, and North America. Again, the findings showed that the main priority for publishing is journal quality and reputation, one metric of which is the journal impact factor. A similar finding came from a large survey of international authors, including authors who published in traditional subscription journals, OA journals, and OA megajournals. All categories of authors ranked the quality of the journal, the high quality of peer reviews, review criteria, the speed of review and publication, and publisher reputation, and impact factor ranked the highest [21].

However, where articles are published may not be at the sole discretion of individual researchers. Nicolas et al. [1] reported that deciding where to publish is often a shared endeavor depending on the discipline and the country. Authors may share the responsibility with a research team, department chair, mentor, etc. or even the government in some countries.

2.3. Views of Open-Access Publishing

If one agrees that the goal of publishing is to share with others in the field, and prestige is predicated on the number of citations research accrues, then logically, opening readership to the broadest possible audience makes sense: the more researchers in the field that can read and build on that research, the better. This is one of the theoretical benefits of OA publishing, but the scholarly community does not wholly embrace the idea.

Dalton et al. [2] conducted a focused survey of 822 faculty and Ph.D. students at large research universities in the U.S. and Canada from a broad range of disciplines. The study found OA to be a polarizing topic, with apparent clustering around positive and negative views of OA. The pro-OA group was more likely to accept APCs and see OA as a way to expand the readership of their scholarship. The anti-OA group was more likely to be skeptical of the quality of OA journals. Like other studies, Dalton found that researchers in the STEM fields were much more likely to be in the pro-OA group, while social sciences were more likely to fall into the non-OA group. Additionally, higher-ranking faculty members (e.g., full professor over assistant or associate) were more likely to be anti-OA. A newer study by Nicholas et al. in 2020 [22] showed that willingness to publish in OA journals may be increasing among early-career researchers, with over two-thirds reporting publishing in OA. However, the finding was strongly tempered by Nicholas' previous research showing incongruity between survey answers and researchers' actual CVs.

Psychology researchers such as those in this study sample are typically grouped in the social sciences. However, they may share funding sources and research areas with colleagues in STEM, medicine, public health, social work, education, and others. In addition to Dalton et al. [2], there are several studies that assess researchers' views and habits on OA in large disciplinary groups, which also found STEM to be more accepting of OA, and arts, humanities, and social sciences exhibiting more concerns [3,4,22]. However, no studies were found that specifically look at psychology researchers or break down disciplines more granularly than as "social sciences".

Views of OA are occasionally in conflict with a faculty's actual publishing habits. Nicholas et al. [1] found that early-career researchers believe that OA publishing is valuable. Nevertheless, they do not publish in OA journals at levels consistent with that value ranking due to constraints placed on them by convention and the desire to gain tenure through prestigious publishing. Additionally, while the 2018 ITHAKA S + R survey found that younger faculty favor OA replacing traditional publishing, it also showed that older faculty were more likely to find value in their research being made available online for free [20].

What, then, are the motivations for researchers who choose to publish in OA journals? An international survey of 57 researchers associated with one OA journal reported their motivations for publishing in that journal were "high availability and visibility for the paper" (77.2%), "because of the journal's reputation" (38.6%), and due to the "high citation impact" (35.1%), closely followed by "the importance of global access to knowledge" [23] (p. 12).

In addition to these kinds of personal considerations, funding agencies and institutions may have OA policies. Funders increasingly require articles that result from funded research to be OA. The Registry of Open Access Repository Mandates and Policies [24], based out of the University of Southampton, England, has shown a dramatic increase since its inception. In 2005, the site tracked 125 funders and organizations with policies requiring OA. In the first quarter of 2021, that number soared to 1077. Researchers may fold any costs associated with OA publishing into grants or require other funding sources to meet the mandate. The Cal State LA Library offers a program to assist researchers with paying APCs, though the funds are limited and do not always cover the total cost.

Beyond the library support for APCs, Cal State LA has no OA policy. On the other hand, several other campuses in the CSU system have formal policies, including three that belong to The Coalition of Open Access Policy Institutions [25]. The nearby sister campus of California State University, Northridge adopted an OA policy in 2013 in favor of OA,

stating, “Open-access publishing and archiving is central to the long-term viability of the dissemination of scholarship” [26]. Utilizing sister-campus policies such as this could help to inform talks to develop one at Cal State LA.

2.4. Authors Seek Easy Ways to Identify “Quality”, Nonpredatory Journals

Predatory publishing generally refers to the systematic for-profit publication of purportedly scholarly content (in journals and articles, monographs, books, or conference proceedings) in a deceptive or fraudulent way and without any regard for quality assurance. In short, fake scholarly publications lack the usual features of editorial oversight, and transparent policies and operating procedures that are expected from legitimate peer-reviewed publications [27] (p. 3).

Initiatives such as Think Check Submit [28] aim to give authors a toolbox for identifying trustworthy journals and publishers. The initiative brings together some of the key players in the OA world and organizations representing publishers. The core of the toolbox is a checklist for authors to consider with questions such as: Is it clear which fees are charged? Are guidelines provided for authors on the publisher’s website? Is the publisher a member of a recognized industry initiative? Even for authors interested in publishing in OA journals, it can be difficult and time-consuming to research all factors associated with quality and prestige, even if one knows what to look for.

The time commitment and uncertainty associated with performing one’s evaluation leaves many authors looking for quick answers to a journal’s quality and assurances against being fooled by predatory journals. Curated lists of predatory or approved journals have sought to meet this demand. However, there are concerns about the oversimplification of lists. Da Silva and Tsigaris [29] criticized the use of predatory lists. They argue that lists typically use subjective and opaque criteria, are prone to false positives and negatives, potentially cause legal and personal consequences for creators, can damage the reputation of all involved, and cannot supplant individual case-by-case evaluation.

Likewise, Da Silva and Tsigaris [29] argue that the fear of predatory journals may go beyond influencing where authors publish to what research they cite. They note that some journals have gone so far as to ban authors from citing journals listed on Beall’s List of Predatory Journals and Publishers. Strinzel et al. [30] found that, while lists can be useful for researchers to identify journals that are likely to be fraudulent, there is an overlap between the content on predatory lists and lists of vetted journals. They found an overlap of journals in the DOAJ with Beall’s list (34) and Cabell’s Predatory Reports (37), but only one overlapping journal in Cabell’s Journalytics with Beall’s. Additionally, they found that criteria to identify legitimate journals were typically easy to verify, requiring little effort for journals to meet, and more complex attributes such as peer-review quality were less likely to be included.

2.5. Research Habits

It is unknown how many journals bar authors from citing predatory journals, as Da Silva and Tsigaris suggest. However, the question remains whether researchers give the same level of scrutiny to journals that they cite as that to journals in which they publish. While there are a modest number of studies that look at researchers’ views on publishing in OA journals, there is far less on how researchers view using or citing OA journals. Most research in this area focuses on the number of citations that OA articles receive vs. traditionally published articles, with the so-called “citation advantage”. The OA citation advantage is the idea that OA articles are cited more due to their increased availability. There is some disagreement in the literature on whether there is a causal effect or a correlation, on the size of the effect, and about how varied methods can even address the question [9,31,32].

Recent research shows that faculty increasingly use freely available search engines to perform research. The 2018 ITHAKA S + R survey found that the use of Google Scholar as the starting point for research rose from 2015 to 2018, while the use of specific search

engines declined, and the use of the library's catalog remained the same [20]. This was particularly true for researchers in the social sciences, with Google Scholar as the most selected first-option rising from 26% in 2015 to 33% in 2018. The survey showed that researchers' primary source of content is still the library's collections and subscriptions, with little difference from 2012 to 2018. However, they also found that the use of freely available materials online increased in that time.

3. Methods

3.1. Faculty-Authored Publications

Faculty publications were gathered from tenured and tenure-track faculty in the Cal State LA Psychology Department for six years from 1 January 2015 to 31 December 2020. This study is focused on peer-reviewed journals. Therefore, books, non-scholarly periodicals (popular and trade magazines, etc.), and opinion or editorial articles that did not include cited references were excluded from the final dataset. There are 20 tenured and tenure-track faculty members in the department. However, 1 author only published with another faculty member, and 2 did not publish peer-reviewed journal articles during the study period. Thus, a total of 17 faculty were included in the sample. While the small sample size limits the generalizability of the study, it allowed for the thorough manual gathering of faculty works that would not be possible with a larger group of faculty. Faculty websites, Google Scholar, Web of Science, and Scopus were used to create a comprehensive bibliography of faculty publications.

Each publication was individually reviewed and checked in Ulrich's Web Global Serials Directory to confirm that the journal had been peer-reviewed. A total of 94 faculty-authored articles met the criteria. The OA status of each article was confirmed using OA data from WoS and Scopus, and manually double-checked in The DOAJ for Gold+ status, the journal's website for current Bronze availability, and Google Scholar for Green access.

When manually identifying Green OA in Google Scholar, only articles available at NIH.gov and University Institutional Repositories were included. Other university websites, social repositories (ResearchGate or Academia.edu), and author websites were marked as academic social networks (ASNs), and no faculty publications were found on preprint servers. Websites that were not connected with the article's authors, for example, a foreign university website, were not included. Availability on these sites is not likely to be the result of self-archiving by the authors. Additionally, when searched in Google Scholar, 2 articles returned dead links to a social archiving site. The dead links were likely an indicator of the revolving nature of articles posted to ASNs.

Personal author websites and other kinds of non-repository university websites (e.g., department pages) are also unlikely to have strict copyright-compliance monitoring in place; therefore, this study groups them with ASNs. While an understanding of the availability of articles in ASNs or other unregulated self-archiving sites at any given time is valuable for understanding access; the manual process required to check for this kind of availability makes any large-scale study difficult or unfeasible. For this reason, ASNs were only counted for faculty publications. The sample of faculty publications is much smaller, thereby making a tally of ASNs possible, and their use can help to explain faculty behavior on the case level.

Articles and journals in all OA levels have an ever-shifting status. Journals that once ran traditional subscription models often "flip" to Gold OA models. This shift can make it difficult to pinpoint if the journal was actually OA at the time of publication. Bronze-level access can also change over time. While some journals offer lifetime access through the payment of APCs, others automatically give Bronze access for the newest issue or, conversely, after an embargo period. For Green OA, publishers may place an embargo period on the author's rights to self-archive or authors may not archive their articles right away after publication. These shifts place limits on the ability of this and other studies to

assess faculty behavior at the time of publication or use. However, we can still gain a clear picture from OA status at a snapshot in time to inform discussion with faculty.

3.2. Cited References

With the complete list of faculty articles, a dataset was created of all cited references therein. While OA existed in the 1990s, it was a very niche industry; therefore, this study narrowed cited references to peer-reviewed journals published from 2000 onwards. Both WoS and Scopus include built-in tools for analyzing sources on dimensions such as impact factor, times cited, and OA status. These tools are particularly valuable for assessing the OA status of articles published in hybrid journals as Bronze and Green self-archived articles. However, both applications' tools presented challenges in attaining a complete list of cited references. Cal State LA's subscription level excluded many citations in WoS, some journals were not indexed by either tool, and individual citations occasionally do not transfer for unknown reasons, thus creating incomplete lists. Missing citations are particularly concerning when studying OA journals, which are more likely to be small or new and not yet indexed.

To create a complete list, cited references for each article were exported from Scopus, which uses text recognition to pull the entire reference list. Then, cited references from several faculty articles that were not indexed in Scopus were manually added. To confirm that all cited references in the dataset are from peer-reviewed journals and to further analyze the journals themselves, the source field was pulled to create a separate dataset. Then, after deduplication, each journal was manually checked in Ulrich's Web, The Directory of Open Access Journals (DOAJ), and Cabell's Journal Analytics. Any duplicate citations and citations from sources that did not match the inclusion criteria were removed. In total, 2591 article citations from 876 journals met the criteria for inclusion. With the final list, OA status from WoS and Scopus' analytical tools for each cited reference was used to cross-check each article, and citations not indexed in Scopus were manually checked using the DOAJ, journal websites, and Google Scholar.

4. Results and Discussion

The Psychology faculty at Cal State LA publish articles at all levels of (see Table 2). Of the 94 articles produced, 41% (39) are available in some form of OA. Only four faculty had no articles available as OA. Only one faculty member had all of their articles available as OA, with articles in all three forms: Gold+, Bronze, and Green. One other faculty member had all of their publications available on an academic social network. Otherwise, most faculty chose a mix of OA types and traditional subscription access. Overall, 13% of articles were published in Gold+ journals, a slightly lower instance than the overall percentage of journals indexed in Scopus listed as OA (16%). This indicates that faculty publish in OA journals at a similar rate to their availability.

Table 2. Cal State LA Psychology-faculty-authored articles by OA classification.

	All OA ^a	Gold+	Bronze	Green	ASNs
Faculty articles n = 94	41% (39)	13% (12)	13% (12)	16% (15)	26% (24)

^a Excluding academic social networks (ASNs).

Green OA accounted for the highest occurrence of all OA types, indicating that Cal State LA Psychology faculty are interested in making their work available through self-archiving even when Gold+ and Bronze options are not available. Cal State LA does not currently have an institutional repository. The Cal State system is only beginning to make

available a systemwide repository, Scholar Works, starting with theses and dissertations. Therefore, it makes sense that, in addition to formal Green archiving, about one-quarter of faculty articles were found in social repositories such as ResearchGate and Academia.edu or other options such as other kinds of university web pages or author websites. It is unknown if any of these articles were posted without proper permission from publishers. These results are consistent with previous studies by Lovett et al. [33], and Laasko [10], which found higher usage of academic social-networking sites than of institutional repositories at 20.3%/15.4% and 15.8%/9.9%, respectively.

In addition to checking OA status, Google Scholar was also used to gather the times cited. The average times cited were nearly identical for traditional non-OA articles (17.67), Gold+ (17.58), and Green (17.78). Only Bronze had slightly higher average times cited, at 20.25. These numbers are in opposition to the OA citation-advantage theory that states that OA publications are cited more. However, the relatively small sample size may limit the application of this metric.

A common reason for avoiding OA publishing is the associated cost. In 2021, cOAlition-S (a group of national research funding organizations) looked at several sources comparing the APCs of fully OA and hybrid journals [34]. They concluded that hybrid journals are more costly to publish in. Of the 12 fully OA journals in which the faculty published, three had no APCs, and the others ranged from USD 1000 to USD 2950, the average coming in at USD 1691. The average cost for Bronze articles is somewhat more challenging to calculate. One journal only gives the APC by request on the basis of article type, and two others use a delayed OA option with no APC after the delay. The seven remaining journal APCs were in the range of USD 2780–3860. Therefore, assuming the two delayed OA options were free to the authors, the average price for hybrid journals was USD 3088. Given this information, it would be in the interest of authors and librarians advising them to first seek fully OA journals if cost is a concern.

All 31 faculty publications that were not OA or self-archived in an academic social network are in journals that allow Green self-archiving. The majority (22) required an embargo period before posting, and some publishers had additional requirements such as posting rights notices. Five journals published by Sage and Johns Hopkins University Press only allowed self-archiving at the author's institutional repository. This kind of policy effectively makes the option invalid for Cal State LA faculty authors until the California State University system IR is expanded, or an outside coauthor can archive the paper at their institution. The American Psychological Association had the most permissive Green OA policy allowing for immediate archiving of accepted versions of articles on various sites, including Academic Social Networks (ASNs).

4.1 Faculty Citation of Open Access Journals

The Psychology faculty at Cal State LA regularly cite OA articles in their research; 43% of all citations from peer-reviewed journals were in some form of OA (see Table 3). However, the use of Gold+ journals was lower than expected, at only 6% of the total citations. The low rate of Gold+ publishing is a surprising finding considering the percentage of journals indexed in Scopus listed as Gold OA is nearly three times that of 16%. Possible explanations for the difference might include mistrust of OA journals, OA journals not being as easily discoverable to the Cal State LA faculty, or Cal State LA faculty research areas not being well-covered in OA journals. With no negative bias against OA in a faculty's own publishing habits, the most likely hypothesis is that OA articles are challenging to locate.

The 2018 ITHAKA S + R [20] survey found that library collections and subscriptions are still the primary sources of information for faculty. While library discovery systems likely catalog Gold + OA journals, the retrieval process is not always smooth. At Cal State LA, the link resolver often sends users to the main journal page rather than to the article, causing confusion among users. Bronze articles in hybrid journals also present challenges. A 2016 column in *The Serials Review* discussed challenges for libraries to display OA

content from hybrid journals, noting that systems traditionally work at the title level. Therefore, OA articles in subscription journals to which a library does not subscribe may not be discoverable [35]. Equally important is that discovery systems often only incorporate Green articles from the university's own repository. Google Scholar is more likely to index all types of OA, including self-archived Green articles and articles in academic social networks.

Conversely, if we suppose that the difference between OA publishing and citing rates is based on a lack of disciplinary availability, this may indicate that the Cal State LA faculty are actively seeking to publish in OA journals above what is available. Further studies are needed to understand researchers' views of using Gold+ journals and the availability of OA journals across disciplines.

The number of Bronze citations was also relatively low, at 10%. Of the 538 cited journals listed in Cabell's, 86% are listed as hybrid journals, and a significant number of the unlisted journals are also likely to be hybrid. This discrepancy may indicate that, while psychology-journal publishers make hybrid options available, authors are not choosing those options at high rates. The low adoption is likely due to the high costs associated with hybrid APCs. Much like faculty publishing percentages, Green articles again account for the highest percentage of all OA types. High levels of Green publishing may be linked to the higher use of Google Scholar and freely available sources as researchers become more familiar with these kinds of resources [20]. However, department faculty authors are not publishing Green articles at the same rate as that at which they cite them: 28% of cited references vs. 16% of faculty publications. The low adoption of Green self-archiving may be due to the lack of an institutional repository.

Table 3. Cited references by OA level.

	All OA	Gold+	Bronze	Green
Cited Refs n = 2591	43% (1126)	6% (145)	10% (250)	28% (731)

PLoS ONE was the most frequently cited Gold+ journal and the 20th of all journals in the sample. Among frequently referenced OA journals, only two journals, *PLoS ONE* and *Frontiers in Psychology*, are considered to be “megajournals” [3]. The average cost of APCs for the top-cited OA journals (see Table 4) is USD 1591, similar to faculty-authored article journals. These costs are in line with The Cal State LA Library OA author fund, which has paid USD 1000 or USD 1500 for APCs in the past depending on budget availability. Conversely, the average cost of APCs for the top-cited traditional journals (Table 4) was nearly double at USD 3123. Regardless, The Cal State LA author fund only funds Gold OA journals, and authors looking to publish in hybrid journals would likely need substantial external funding.

Table 4. Top cited OA journals.

Rank	Journal Title	Total Refs	DOAJ ^a	APCs	2019 Impact Factor
1	<i>PLoS ONE</i> Open access from 2006	17	DOAJ Seal	USD 1595	2.740
2	<i>NeuroImage</i> Open access from 2020	15	DOAJ Listed	USD 3000	5.902

3	<i>Frontiers in Psychology</i> Open access from 2010	7	DOAJ Seal	USD 2950	2.067
4	<i>Acta Psychologica</i> Open access from 2021	6	DOAJ Listed	USD 1500	1.380
5	<i>CBE Life Sciences Education</i> Open access from 2018	6	Not Listed	USD 1900	N/A
6	<i>Cyberpsychology</i> Open access from 2007	5	DOAJ Listed	No charges	1.354
7	<i>Implementation Science</i> Open access from 2006	5	DOAJ Seal	GBP 2090 (approx. USD 2555)	5.531
8	<i>School Community Journal</i>	4	DOAJ Listed	No charges	N/A
9	<i>Physical Review Special Topics—Physics Education Research</i>	3	DOAJ Listed	USD 2000	N/A
10	<i>American Journal of Men's Health</i> Open access from 2016	2	DOAJ Listed	USD 2000	1.605

^aDOAJ Seal is an additional level of recognition for journals that meet the DOAJ's highest standards for best practices.

The use of Bronze and Green options in the top overall journals again shows that Green is a more popular option with researchers than Bronze is. The top 10 overall journals are all listed as hybrid in Cabell's, and at least 10% of citations from those journals are Green (see Table 5). Only one journal, *Cyberpsychology, Behavior, and Social Networking*, published by Libert, was not transparent on its website about its APC or Green option guidelines. Instead, it states, "For price quotes or to place an order for reprints, please contact" [36]. Some publishers differentiate between preprints or submitted versions versus accepted versions in their policies for shelf-archiving embargos (Green Policy in Table 5). The embargo times listed here are for the accepted version or the version of record, though the actual posted versions may vary.

Table 5. Top overall cited journals.

Rank	Journal Title	Total Refs	APCs	Bronze Refs.	Green Policy	Green Refs.	2019 Impact Factor
1	<i>Psychological Science</i>	42	USD 3000	2	Instant	13 (31%)	5.367
2	<i>Child Development</i>	36	USD 3300	0	Embargo 12 months	12 (33%)	4.891

3	<i>Computers in Human Behavior</i>	36	USD 2950	0	Embargo 24 months	6 (17%)	5.003
4	<i>Journal of Personality and Social Psychology</i>	36	USD 3000	1	Instant	23 (64%)	6.315
5	<i>Developmental Psychology</i>	35	USD 3000	3	Instant	25 (71%)	3.063
6	<i>Journal of Youth and Adolescence</i>	32	USD 3280	1	Embargo 12 months	10 (31%)	3.121
8	<i>Psychological Bulletin</i>	26	USD 3000	2	Instant	17 (65%)	20.838
9	<i>Applied Cognitive Psychology</i>	26	USD 2500	2	Embargo 12 months	5 (22%)	1.591
7	<i>Personality and Social Psychology Bulletin</i>	24	USD 3000	0	Instant	3 (13%)	2.961
10	<i>Cyberpsychology, Behavior, and Social Networking</i>	20	Not Listed	0	Not listed	14 (70%)	2.347
10	<i>International Journal of Eating Disorders</i>	20	USD 4200	2	Embargo 12 months	2 (10%)	3.668

5. Conclusions

Cal State LA Psychology tenured and tenure-track faculty publish articles in Gold+ OA journals at similar rates to those of the overall publishing landscape. Librarians can utilize the evidence of current OA publishing practices to enhance ongoing discussions with faculty, and to promote further OA publishing in psychology and other social sciences at Cal State LA. Additionally, more formal qualitative research on authors' views can give advocates a more refined understanding of authors' publishing and research practices to promote OA beyond the local level with enhanced education and talking points.

Cal State LA faculty cite Gold+ OA journals at a lower rate than what is available in the overall publishing landscape, which may indicate skepticism of their quality, discovery, or access issues, or a lack of focused disciplinary publications. The discrepancy between faculty publication rates in Gold+ OA journals and the much lower rate of citing Gold+ OA journals may indicate that faculty actively seek Gold+ OA journals in which to publish. Further study is needed to understand the faculty research process, including perceptions of OA articles when conducting literature reviews and any barriers to accessing OA articles in library discovery systems.

Bronze OA was also lower in the cited-reference sample, though to a lesser degree. Low rates and higher APCs suggest that, while Bronze OA may be a good option for faculty seeking traditional journals or high-impact factors, Bronze is more expensive and could be cost-prohibitive without funding. For faculty publications and cited references, Green OA is the favorite option for OA publishing. However, the lack of an institutional repository at Cal State LA and a potential increase in the use of Google Scholar may lead faculty to other forms of self-archiving that are less regulated. The California State

University system should expand its institutional repository as soon as possible to allow faculty a stable self-archiving option.

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