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My Year of Citation Studies, Part 2

Mary Whisner

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Practicing Reference . . .

My Year of Citation Studies, Part 2*

Mary Whisner**

In this second installment examining citation studies, Ms. Whisner looks at citation patterns of articles versus student works, as well as patterns across journals.

¶1 In my last column,¹ I began a year-long venture into citation studies. Near the outset of that column, I discussed some ways that citation count is an imperfect proxy for quality. For instance, an article might be cited a lot only to criticize it (a high citation count doesn't ensure high quality), or it might be very useful to only a small audience (a low citation count doesn't ensure low quality).² Still, citation counts can tell us *something*, both about individual pieces and about journals. And so in this installment, I explore a dataset from journals to see whether I can learn something about the citation patterns of articles versus student works, as well as the citation patterns across journals. I find this sort of thing interesting. And it's worth-while for us reference librarians to try to understand more about the materials we use and how they are used by researchers. Getting into the weeds (metaphorically) can yield some insights not possible from a loftier vantage point.

Methodology

¶2 My sample offers variety, but it is not comprehensive and was not selected scientifically. It's just thirty-two journals, drawn from HeinOnline's Law Journal Library, which includes more than 2500 law and law-related periodicals.³ I chose only student-edited journals from U.S. law schools, which narrows the pool to, say, 500 or so.⁴ Browsing through the list of journals, I chose an assortment, both general law reviews and specialty journals, from private schools and state schools,

^{* ©} Mary Whisner, 2018. Many thanks to Mary Hotchkiss and Crystal Albeerthal who commented on a draft of this piece.

^{**} Research Services Librarian, Marian Gould Gallagher Law Library, University of Washington School of Law, Seattle, Washington.

^{1.} Mary Whisner, My Year of Citation Studies, Part 1, 110 LAW LIBR. J. 167, 2018 LAW LIBR. J. 7.

^{2.} Id. at 168-69, ¶ 3.

^{3.} Law Journal Library, HeinOnline, https://home.heinonline.org/content/Law-Journal-Library/[https://perma.cc/QJ4U-ZYGJ].

^{4.} In 2010, the Current Index to Legal Periodicals indexed 191 general law reviews and 358 student-edited specialized law journals. Alena Wolotira, From a Trickle to a Flood: A Case Study of the Current Index to Legal Periodicals to Examine the Swell of American Law Journals Published in the Last Fifty Years, 31 LEGAL REFERENCE SERVICES Q. 150, 157 (2012).

from prestigious schools and not-so-prestigious schools.⁵ I looked at all four journals published by the University of Washington, where I work.⁶

¶3 Journal by journal, I looked at each piece published in 2012, noting how many times it has been cited (using HeinOnline's ScholarCheck) and whether its author was a student (the piece could be called a note, comment, recent development, or something else). I excluded book reviews. I included memorials, tributes, and symposium introductions: some are pretty skimpy and not likely to be cited, but others are substantial, and I didn't want to draw a line. This gave me a sample of 939 pieces. ("Pieces" includes both articles and student pieces.)

¶4 Why did I stop at thirty-two journals and 939 pieces? There were many good reasons. I got tired of building my spreadsheet. An old injury flared up, making it uncomfortable to use the keyboard. I wanted to stop so that I could eventually write. And I thought I had a decent enough sample to look at.

¶5 As I was developing my data, it occurred to me that many of the results would not surprise anyone familiar with American law reviews. For instance, articles in the *Harvard Law Review* were cited more often than articles from the *Akron Law Review*. To get a sense of how closely off-the-cuff judgments tracked the data, I posted a quick survey in the law school.⁸ Participants were asked: "Using whatever subjective criteria you want, please assign each journal a letter, with A representing top journals, B representing good journals, and C representing the rest. There are thirty-two journals in all. There is no mandatory curve." The mean of the responses for each journal produced a "GPA" for that journal.⁹

¶6 Appendixes 1 and 2 present summary data from my spreadsheets.

Citing Rates by Journal

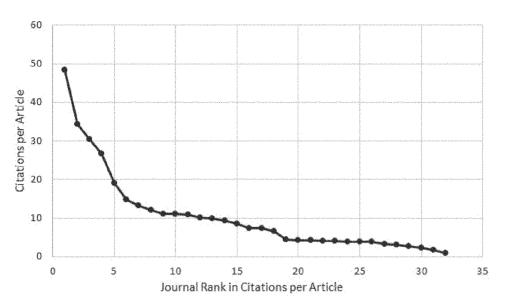
¶7 Some journals are cited much more often than others. This is true for citations to articles, citations to student pieces, and citations to pieces overall. But the

- 6. When you aren't committed to sampling, say, every twenty-third article from an alphabetical list, you can select what you want.
- 7. I have incomplete data from the *Duke Law Journal*. At the time of my searches—March 19–26, 2018—HeinOnline had ScholarCheck information for only part of 2012: volume 61, issues 4–8. ScholarCheck did not cover volume 52, issues 1–3. I corresponded with HeinOnline support and learned that ScholarCheck is updated once a month, and the missing issues should be added in the next pass. In my calculations of citations per piece, I include only the pieces for which I have data.
- 8. The thirty-six respondents included twenty-two law faculty, two law school staff, and twelve law library staff and law librarianship students.
- 9. I liked it that two pairs of journals—*Arizona Law Review* and *Arizona State Law Journal* and *Indiana Law Journal* and *Indiana Law Review*—have such similar titles that some people might not distinguish them readily.

^{5.} Akron Law Review, American University Law Review, Arizona Law Review, Arizona State Law Journal, Berkeley Journal of Gender, Law & Justice, BYU Law Review, California Law Review, Cornell Law Review, Denver University Law Review, Duke Environmental Law & Policy Forum, Duke Journal of Comparative & International Law, Duke Journal of Gender Law & Policy, Duke Law Journal, Florida Law Review, Harvard Civil Rights-Civil Liberties Law Review, Harvard Journal of Law & Gender, Harvard Law Review, Indiana Law Review, Indiana Law Journal, Journal of High Technology Law (Suffolk), Louisiana Law Review, Law & Inequality (Minnesota), Maine Law Review, Pacific Rim Law & Policy Journal (Washington), Washington Journal of Environmental Law & Policy, Washington Journal of Law, Technology & Arts, Washington Law Review, Wisconsin International Law Journal, Wisconsin Journal of Law, Gender & Society, Wisconsin Law Review, Yale Journal of Law & Feminism, Yale Law Journal

Figure 1

Citations per Article



variance is much greater for citations to articles than it is for citations to student pieces. Articles from the 2012 Harvard Law Review were cited an average of 48.4 times, those from the Yale Law Journal were cited an average of 34.4 times, and those from the Duke Law Journal (available data) were cited an average of 30.5 times. At the other end of the spectrum, the bottom five journals were the Maine Law Review (3.1 citations per article), Washington Journal of Law Technology & Arts (2.6), Washington Journal of Environmental Law & Policy (2.2), Pacific Rim Law & Policy Journal (1.8), and Journal of High Technology Law (1). Figure 1 shows that drop-off between the top six journals (average of 14.8 citations per article) and the rest. The bottom 11 (two tied for 22nd place) average 4.1 citations per article or fewer.

¶8 The range of average citations to student pieces (Fig. 2) was much smaller than the range for articles, topping at 10.5 (Yale Law Journal) and bottoming at 0 (Duke Environmental Law & Policy Forum). Also making strong showings were California Law Review (8), Harvard Journal of Law & Gender (7), Cornell Law Review (6.7), and American University Law Review (6.5).

¶9 I might have predicted a strong correlation between a journal's citation average for articles and its citation average for student pieces, but that's not the case. Figure 3 shows journals' citations per article, with journals ranked from first to thirty-second; the citations per student piece and per piece are graphed as well. You can see how much wobble there is in the latter two measures compared with the article citations.

^{10.} I wasn't tickled that all three of my school's specialty journals were in the bottom five, but that's the way the data played out. By the way, *Pacific Rim Law & Policy Journal* has since been renamed, with a broader focus, *Washington International Law Review*.

Figure 2

Citations per Student Piece

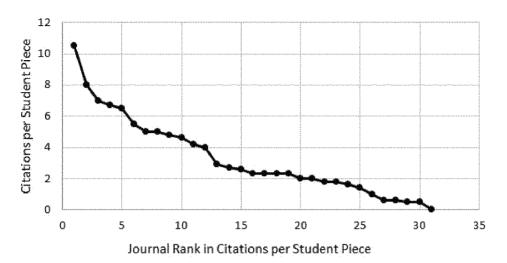
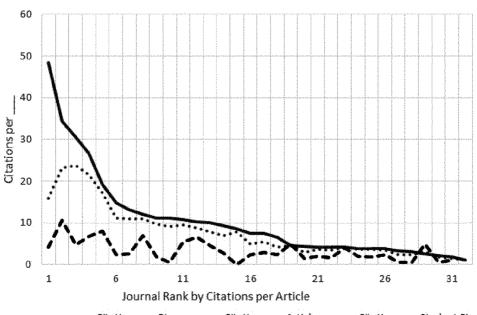


Figure 3

Citations per Article, Student Piece, and Piece



• • • • • Citations per Piece — Citations per Article — — — Citations per Student Piece

How Many Student Pieces?

¶10 If you had asked me, I would have guessed that most journals run about the same number of articles and student pieces. But in this sample, I found that journals vary widely in the number of student pieces they publish (Fig. 4). The Harvard Law Review had sixty-one student pieces in 2012, including notes, comments, and recent developments. With eighty pieces overall, that means that just over threequarters of *Harvard* pieces were by students. (That's counting *pieces*: since many of the student pieces are fairly short (less than ten pages), the *pages* in the journal by students are a much smaller portion.) Other journals with a high percentage of student pieces were Duke Journal of Comparative & International Law (fifty percent), Law & Inequality (forty-eight percent), and Yale Law Journal (forty-seven percent). At the other end of the spectrum, some journals had very few student pieces: Indiana Law Journal (fifteen percent), Akron Law Review (twelve percent), Indiana Law Review (eleven percent), Duke Environmental Law & Policy Forum (eight percent), and Journal of High Technology Law (zero percent). Of course—as with everything in this study—this is all based on a sample from just one year. Perhaps 2011 or 2013 would show very different numbers.

"Grades" from the Survey

¶11 Let's pull in the scores from my survey. The journals with the highest GPAs were Harvard Law Review and Yale Law Journal (both 3.97), Cornell Law Review (3.89), California Law Review (3.81), Duke Law Journal (3.78), and Harvard Civil Rights–Civil Liberties Law Review (3.42). The lowest were Wisconsin International Law Journal (2.36), Wisconsin Journal of Law, Gender & Society (2.36), Journal of High Tech Law (2.36), Louisiana Law Review (2.25), Maine Law Review (2.22), and Akron Law Review (2.22). Comparing the grades from survey respondents with the

Figure 4

Percent of a Journal's Pieces by Students

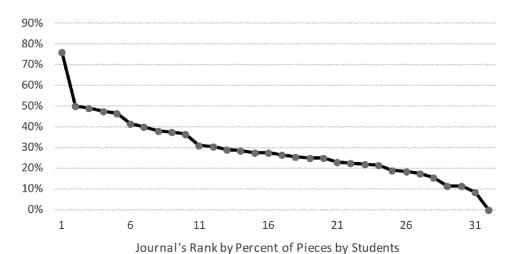
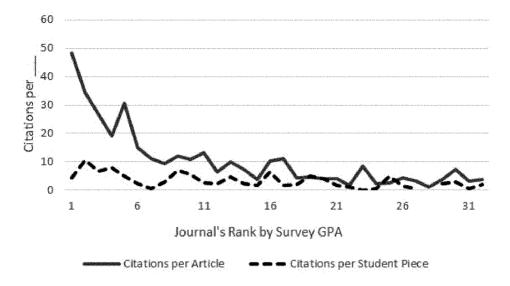


Figure 5

Citations per Article and Student Piece, by Journal's GPA Rank



average citations per article and per student piece (Fig. 5), we see a pretty decent correlation¹¹ between GPA and average article citations. There seems to be little or no correlation between GPA and citations to student pieces.

Why Would Journals Vary?

¶12 As with citation counts for individual articles, we can say that the difference in average citations per article or average citations per student piece is some reflection of quality. But what would cause frequent (or infrequent) citation?

¶13 Let's compare two hypothetical journals, the *Solid Gold Law Review* and the *Tarnished Brass Law Review*. Articles that appear in *SGLR* routinely get more citations than articles in *TBLR*. Why?

¶14 Reputation is certainly a factor. If researchers find a number of articles on a topic, they might choose to read (and cite) the ones from the *SGLR* because they have a sense that it's better. This is so even when researchers find pieces in databases that include hundreds of journals, rather than just looking at a handful of journals in print. We all have limited time and energy; it makes sense that if we run a search and find, say, thirty articles, we might choose to look at what we think are the best journals.

¶15 There could be another layer of reputation at work. Maybe I don't think that *SGLR* is significantly better than *TBLR*—but if I think that my readers think that it is, then I might cite it so that my readers think that I'm using the best source.

¶16 Other factors might affect quality, not just the perception of quality. Perhaps the students at Solid Gold Law School are smarter and better read than stu-

dents at Tarnished Brass Law School. The students at Solid Gold Law School might also have access to more knowledgeable faculty members to teach them and advise their journal. ¹² Those lucky students might also have access to a better law library. ¹³ If law reviews select the strongest students (they all try to, after all), then the editorial board of *SGLR* will be better than that of *TBLR*. Those editorial boards could be better at selecting articles to publish. And they could be better at editing the articles they select. These advantages could grow over time, as one editorial board mentors the next.

¶17 Reputation comes in again: if the best authors try to place their articles with journals with strong reputations, then those journals will publish more articles that are very good and hence worth citing. Even if an author doesn't think that *SGLR* is better than others, she might want to place an article there because she thinks her tenure committee thinks it's better. Maybe members of the tenure committee don't even have strong opinions, but they give a mental boost to the journals they think are valued by the academic community (or the professors and deans who will fill out a *US News* survey about their school's reputation). It's the "Tinkerbell" phenomenon—a group opinion endows authority on a work. ¹⁴

¶18 Finally, there's the journal's mission. If *SGLR* is a general-interest law review with a national scope, then its potential audience will be larger than that of a journal that covers only a single jurisdiction. This might also affect journals that focus on special topics—but some specialty journals in my sample did very well compared to general law reviews. The top specialty journals were *Harvard Civil Rights-Civil Liberties Law Review* (sixth out of thirty-two), *Harvard Journal of Law & Gender* (eighth), *Yale Journal of Law & Feminism* (eleventh), and *Duke Environmental Law & Policy Forum* (fifteenth).¹⁵

Citations of Individual Pieces

¶19 I also looked at the citations of individual pieces (both articles and student pieces). The range for articles was from a high of 173 citations to a low of zero—a fate shared by sixty-one articles. ¹6 The median article was cited six times. The range for student pieces was from a high of seventy-six to a low of zero. ¹7 Only one stu-

^{12.} It's also possible that Solid Gold Law School's professors are so busy writing books, arguing Supreme Court cases, and speaking at far-away conferences that *SGLR* students would have less access to faculty than *TBLR* students. Remember that I'm just speculating about factors that *might* be present.

^{13.} Oddly, I didn't think of this point until the final editing stages. But in *Law Library Journal*, we really ought to at least speculate that an excellent law library could make a positive difference in journal quality.

^{14.} See Mary Whisner, Bouvier's, Black's, and Tinkerbell, 92 Law Libr. J. 99, 102, 2000 Law Libr. J. 8, ¶ 10 (citing Robert Berring, Chaos, Cyberspace and Tradition: Legal Information Transmogrified, 12 Berkeley Tech. L.J. 189, 193 (1997)).

^{15.} It's not just a coincidence that these journals' titles include the names of law schools that are well respected. The reputation of the school must help the reputation of the journal.

^{16.} Fortunes might change, of course. Some of the articles from 2012 that had not been cited by early 2018 still have an opportunity to find their audience.

^{17.} Out of 634 articles, 61 had no citations. Out of 308 student pieces, 69 had no citations.

Figure 6
Times Articles Cited, by Rank

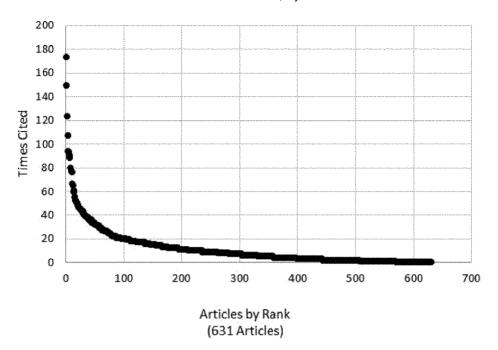
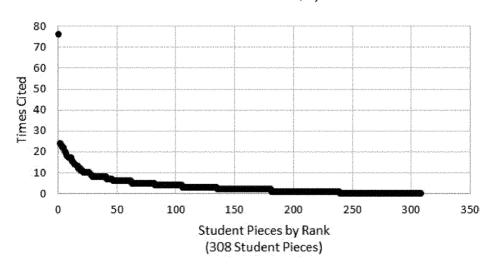


Figure 7

Times Student Pieces Cited, by Rank



dent piece¹⁸ was among the fifty most-cited pieces.¹⁹ Its seventy-six citations were exceptional: the next several student pieces had twenty-four, twenty-three, twenty-two, twenty-two, and twenty citations. The median student piece had two citations. Not all student pieces fare worse than articles: sixty-two were at or above the article median of six citations.

¶20 Figures 6 and 7 graph the number of citations to articles and student pieces against each piece's rank in its category. Maybe it's a little weird to get excited over a chart generated by Excel, but I'll admit that I loved seeing them come out looking just like the standard illustration of a long tail.²⁰ In marketing, the long-tail theory observes that bricks-and-mortar stores stock items that are popular, while online retailers can also stock—and sell—items that interest only a niche group.²¹ Maybe most customers want only a four- or five-sided blue widget, so that's what the local store will carry. An online retailer (say, Amazon) will carry those widgets, but will also be able to carry the more specialized seven-sided chrome-plated widget.²² The "market" for law review articles seems to work like other markets illustrated with long-tail graphs. The articles that get a lot of citations are like the four- and fivesided blue widgets that lots of people need and buy. And at least some of the articles that get only a few citations are like the seven-sided chrome-plated widgets that only a few people need. Online databases of articles may make their market behave like online commerce: in the print era, some researchers would rely on the journals that were convenient to read, like the top journals routed to them or displayed in the faculty lounge, but now it is possible for researchers with very specific needs to find even the obscure articles.²³

Why Would Articles Vary?

¶21 I speculated about why journals would vary in the citations per article, so now I'll sketch out some factors for *articles*. (Many of the comments will also apply

^{18.} Jonah B. Gelbach, Note, *Locking the Doors to Discovery? Assessing the Effects of* Twombly *and* Iqbal *on Access to Discovery*, 121 Yale L.J. 2270 (2012) (seventy-six citations). The author is now a professor at the University of Pennsylvania Law School. https://www.law.upenn.edu/cf/faculty/jgelbach/[https://perma.cc/KFR8-T3QZ].

^{19.} Okay, fifty-one: two pieces tied for number fifty.

^{20.} See, e.g., Chris Anderson, About Chris Anderson, The Long Tail, http://longtail.com/the long_tail/about.html [https://perma.cc/2NP3-84CU] (showing generic graph of "The New Marketplace"; Chris Anderson, The Long Tail, WIRED (Oct. 1, 2014, 12:00 PM), https://www.wired.com/2004/10/tail/ [https://perma.cc/5AGB-VR6J] (showing graph of songs available on Rhapsody and at Wal-Mart); Long Tail, WIKIPEDIA, https://en.wikipedia.org/wiki/Long_tail (last modified Apr. 2, 2018) [https://perma.cc/7PAL-ED8Y].

^{21.} Coincidentally, the day I wrote this paragraph my calendar had a cartoon in which a woman says, "I'm pretty sure middle-aged upper-arm jiggle is the one thing there's <u>not</u> a niche market for." Cartoons from The New Yorker 2018 Calendar, at Apr. 9 (2017) (cartoon by Emily Flake). The cartoon, originally published Dec. 14, 2015, is available at https://condenaststore.com/featured/a-middle-aged-woman-poses-her-arm-up-seductively-emily-flake.html [https://perma.cc/H6WR-6WDQ].

^{22.} One author posits that Amazon does not carry the most specialized items itself but offers a marketplace for long-tail items, via its independent sellers. Jeremy Hanks, *Amazon Doesn't Do Long-tail. Why Should You?*, Practical Ecommerce (Apr. 4, 2017), https://www.practicalecommerce.com/Amazon-Does-Not-Do-Long-tail-Why-Should-You [https://perma.cc/7E6U-HC27].

^{23.} I might try to test this by sampling articles from, say, 1975, 1990, and 2005 and graphing how often each was cited in its first five years in the world to see whether there the graphs' tails are getting longer.

to student pieces. You can extrapolate.) Some articles by their nature don't invite citation: it's worth publishing a few pages about beloved faculty members who have recently retired or died, but researchers generally won't have reason to cite those tributes and memorials. Short pieces introducing symposiums or theme issues also might not get cited often, even though they can help the reader get an overview of the collection. Within the set of "regular" articles, some are naturally of wider interest than others—for example, something about constitutional law or a criminal justice issue that arises in many jurisdictions. Other articles won't interest as many readers. Taxation of financial instruments is very important to tax practitioners in that area, but that's a comparatively small group of readers. Finally, articles do differ in quality: some are elegantly written, well organized, and clear, while others fall short. Any of these factors can affect the number of times an article is cited. And we can add in the effects of reputation, too. People are probably more likely to cite well-known authors who publish in well-respected journals.²⁴

Conclusion

¶22 As part of my yearlong project of looking at citation patterns, I sampled thirty-two journals published in 2012, gathered data about citations to their articles and student pieces, and sorted and sliced the data to look for something interesting. I found considerable variation in citations per article by journal, but less variation in citations per student piece. I surveyed some people in my law school to get subjective impressions of the journals in my sample and found a very strong correlation between these reputation grades and citations per article. And I saw citations to individual articles and to individual student pieces lined up in graceful long-tail graphs. Along the way I mused about factors that might be at play in the variations in citation rates.

¶23 Fortunately, I don't think I've exhausted the terrain because I've committed to writing two more columns on citation studies. Stay tuned.

^{24.} As I compiled my data, I found that I recognized the names of many of the most-cited articles.

Appendix 1: Summary Data by Journal

Journal	Articles	Times Articles Cited	Citations per Article	Student Pieces	Times Student Pieces Cited	Citations per Student Piece	"GPA" from Survey
Akron L. Rev.	23	88	. 3.8	3	6	2	2.22
Am. U. L. Rev.	21	215	10.2	13	85	6.5	2.86
Ariz. L. Rev.	21	211	10	14	64	4.6	3.03
Ariz. St. L.J.	41	173	4.2	12	24	2	2.81
Berkeley J. Gender L. & Just.	5	37	7.4	3	7	2,3	3.03
BYU L. Rev.	30	195	6.5	29	45	2.3	3.03
Calif. L. Rev.	33	630	19.1	7	56	8	3.81
Cornell L. Rev.	26	694	26.7	9	60	6.7	3.89
Denv. U, L. Rev.	40	162	4.1	15	24	1.6	2.67
Duke Envtl. L. & Pol'y F.	11	93	8.5	1	0	0	2.64
Duke J. Comp. & Int'l L.	8	33	4.1	8	32	4	2.69
Duke J. Gender L. & Pol'y	8	36	4.5	3	15	5	2.72
Duke L.J. with citation data	14	427	30.5	5	24	4.8	3.78
Fla. L. Rev.	39	517	13.2	11	29	2.6	3.06
Harv. C.RC.L. L. Rev.	10	148	14.8	4	9	2.3	3.42
Harv. J.L. & Gender	11	132	12	3	21	7	3.25
Harv. L. Rev.	19	920	48.4	61	255	4.2	3.97
Ind. L. Rev. (Indianapolis)	31	118	3.8	4	7	1.8	3.03
Ind. L.J. (Bloomington)	44	489	11.1	8	14	1.8	2.86
J. High Tech. L. (Suffolk)	5	5	1	0	O		2.36
La. L. Rev.	17	125	7.4	12	35	2.9	2.25
Law & Ineq.	11	47	4.3	10	14	1.4	2.42
Me. L. Rev.	18	56	3.1	8	4	0.5	2.22
Pac. Rim L. & Pol'y J.	17	30	1.8	7	7	1	2.64
Wash. J. Envtl. L. & Pol'y	6	13	2.2	2	1	0.5	2.58
Wash. J.L. Tech. & Arts	13	34	2.6	3	15	5	2.56
Wash. L. Rev.	21	195	9.3	12	32	2.7	3,33
Wis. Int'l L.J.	16	*93 51	3.2	7	ےر 4	0.6	در.ر 2.36
Wis. J.L. Gender & Soc'y	10	38	3.8	3	7	2.3	2.36
Wis. L. Rev.	31	344	11.1	7	4	0.6	3.36
Yale J.L. & Feminism	6	65	10.8	2	11	5.5	3.19
Yale L.J.	25	861	34.4	22	232	10.5	3.97
TOTALS	631	7182		308	1143		

Appendix 2: Ranking Data by Journal

Journal	Citations per Piece Rank	Citations per Article Rank	Citations per Student Piece Rank	Percent of Pieces That Are by Students: Rank	"GPA" Rank
Akron L. Rev.	22	24	7	26	31
Am. U. L. Rev.	12	12	10	6	16
Ariz. L. Rev.	13	13	16	10	12
Ariz. St. L.J.	21	21	24	16	18
Berkeley J. Gender L. & Just.	17	16	22	30	12
BYU L. Rev.	19	18	20	22	12
Calif. L. Rev.	4	5	9	18	4
Cornell L. Rev.	3	4	2	27	3
Denv. U. L. Rev.	25	22	26	13	21
Duke Envtl. L. & Pol'y F.	14	15	22	28	22
Duke J. Comp. & Int'l L.	19	22	31	31	20
Duke J. Gender L. & Pol'y	18	19	7	16	19
Duke L.J. with citation data	1	3	4	18	5
Fla. L. Rev.	7	7	27	27	11
Harv. C.RC.L. L. Rev.	6	6	16	13	- 6
Harv. J.L. & Gender	8	8	14	8	9
Harv. L. Rev.	5	1	11	1	1
Ind. L. Rev. (Indianapolis)	22	24	25	3	12
Ind. L.J. (Bloomington)	9	9	3	25	16
J. High Tech. L. (Suffolk)	32	32	29	11	27
La. L. Rev.	16	16	5	7	30
Law & Ineq.	27	20	12	2	26
Me. L. Rev.	29	28	27	12	31
Pac. Rim L. & Pol'y J.	31	31	20	29	22
Wash. J. Envtl. L. & Pol'y	30	30	13	5	24
Wash. J.L. Tech. & Arts	26	29	16	22	25
Wash. L. Rev.	15	14	16	9	- 8
Wis. Int'l L.J.	28	27	32	32	27
Wis. J.L. Gender & Soc'y	24	24	29	20	29
Wis. L. Rev.	11	9	6	20	7
Yale J.L. & Feminism	10	11	15	24	10
Yale L.J.	2	2	1	4	1