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Gender Gap or Gender Bias in Peace Research? Publication Patterns and Citation Rates for *Journal of Peace Research*, 1983–2008[1]

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Many studies report lower academic productivity among women. But are women less likely to get their research published in the first place? The evidence for potential gender bias in publication and impact is mixed. This article examines the gender dimension of scientific publication in international relations (IR) based on submission data for *Journal of Peace Research* for the period 1983–2008. It examines the gender gap in submissions and explores whether the perceived merit of a research paper is affected by the gender of the authors and reviewers. It also investigates whether the gender of the first author influences citation counts. The data show a clear but declining gender gap. They do *not* indicate any significant gender bias in publication success or citations.

Keywords: citation, gender gap, journal, *Journal of Peace Research*, publication

"The leaky pipeline" has become a popular term to describe the loss of women as they make their way through the professional pipeline from student to full professor (Alper 1993). In the social sciences, the percentage of women declines as one moves up the academic ladder (Sarkees and McGlen 1992; Hancock and Baum 2010). For more than three decades, women have made up more than 30% of the doctorates in social and behavioral sciences; yet, at the top research institutions, only 15.4% of the full professors in these fields are women (COSEPUP 2007).

Indicators that might explain this academic gender gap include higher attrition rates for women PhD students and junior staff; a lower probability that women will work full time and acquire permanent positions (for example, due to family responsibilities); greater male satisfaction regarding job security, teaching loads, and advancement opportunities; and last, but not least, academic publishing.

For most scholars, publication productivity, defined by the number of peer-reviewed articles and citation counts, is the ultimate gauge of success. An active

[1]*Authors' notes:* Earlier versions of this article were presented to the 2012 International Studies Association Conference in San Diego, CA; the 2012 National Political Science Conference in Trondheim; and the Gender Research Group, PRIO. We thank the participants of these meetings for useful comments and Jonas Nordkvelle for excellent research assistance. Several colleagues at PRIO assisted with the gender coding. Our replication data have been posted at www.prio.no/data.

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publication record translates into eligibility for research funding, tenure, and promotion. It is widely held that men on average publish more papers than their female counterparts, for reasons sufficiently obscure to earn the label "the productivity puzzle" (Cole and Zuckerman 1984).

The empirical literature has produced mixed results regarding women's research productivity (Tower, Plummer, and Ridgewell 2007). While recent work suggests that women are catching up and in some subfields may publish at rates comparable to men, most studies show women still to be less productive. The evidence for gender bias in citations is ambiguous. Some studies find no difference or even higher average citations for women (for example, Long 1992; Sonnert and Holton 1995; Symonds, Gemmell, Braisher, Gorringe, and Elgar 2006; Borrego, Barrios, Villarroya, and Ollé 2010).

Many explanations have been provided to explain such gender disparities. For example, it has been suggested that there is a gender bias in the peer-review system (for example, Budden, Lortie, Tregenza, Aarssen, Koricheva, and Leimu 2008b; Budden, Tregeza, Aarssen, Koricheva, Leimu, and Lortie 2008a). So far, just a handful of studies, mainly in the life sciences, have systematically tested for gendered publication patterns in academic journals. In this article, we explore data on all submissions during the period 1983–2008 for *Journal of Peace Research* (*JPR*), a highly ranked IR journal focusing on conflict and peace. We also study citation counts for all the published articles. We find a clear but slowly declining gender gap both for submissions and published articles. The gender gap in published articles does not seem to be due to any significant gender bias, and we find no gender bias in citation counts. Coauthorship, however (regardless of gender), seems to positively influence the probability of publication as well as citation.

We first review the previous literature on gendered patterns of scientific productivity and develop some propositions. Next, we describe our data and research design. Finally, we present and discuss our findings.

The Productivity Puzzle: A Review of the Literature

"Work, finish, publish." This maxim is commonly attributed to the great British physicist and chemist Michael Faraday (1791–1867),[2] who was asked about the secret of his success as a scientific investigator. Popularly known as "publish or perish," this formula refers to the pressure to keep publishing in order to sustain a career in academia. No surprise, then, that the sociology of science has devoted considerable attention to how publication practices vary among academic fields and author characteristics. We provide a short review of relevant aspects of this literature.

Gender Gap in Productivity?

In a seminal article, Cole and Zuckerman (1984:218) noted that "more than 50 studies covering various time periods and fields of science report sex differences in published productivity, more specifically, that men publish more than women, even when age and other important social attributes are taken into account." In the three decades after this study was published, a number of new studies have followed their lead.

Some recent studies suggest that there is no relationship between gender and productivity. Xie and Shauman (1998) found that once gender differences in academic positions and resources are taken into account, productivity differences between men and women are negligible. Braisher, Symonds, and Gemmell

[2]See http://en.wikiquote.org/wiki/Michael_Faraday.

(2005) found that publication success in *Nature* and *Science* is not gender dependent. Also, Tower, Plummer, and Ridgewell (2007) and Evans and Moulder (2011), in studies of top journals across different fields and in political science, respectively, found no gender difference in productivity when accounting for the share of women participating in the academic workforce.

By contrast, several other studies have continued to reveal large gender differences in research performance. Kyvik and Teigen (1996), for instance, found that during a 3-year period, men published an average of 6.9 articles compared to 5.6 for women. Symonds et al. (2006) noted a clear gender difference in a cohort of life scientists, with men publishing on average almost 40% more papers than women. In a recent study, Hancock and Baum (2010) surveyed 893 members of the International Studies Association (ISA). They found that women were *not* dramatically less successful than men in publishing, although men scored *modestly* higher than women in publishing articles and book chapters.

Why (if at all) should female academics publish less? Sociological research has provided various answers, including areas of specialization; academic priorities (for example, teaching vs. research); access to mentors and professional networks; and family responsibilities.

Specialization is expected to increase research productivity, and men and women have been found to specialize in different fields (Grant and Ward 1991) and to different degrees. Leahey (2006) argues that women specialize less than men and thereby lose out on important means of increasing their productivity. She found supporting evidence for this with data from linguistics and sociology, with more pronounced effects in sociology.

Overall, women tend to be more involved in service activities at the expense of research. Suitor, Mecom, and Feld (2001) found that overall men spent approximately 10% more time on academic work, while women spent 22% more time on teaching. Corley and Gaughan (2005) found that women spent more time writing grant proposals, but less time working on unfunded research.

According to Baker (2010), gendered collegiality and research networks may influence both ambition and productivity. Mathews and Andersen (2001) argue that women's publishing productivity may be constrained by the particular gendered milieu in which they work and by their placement outside of professional networks and collegial relationships. Their study examined 78 edited volumes in the field of political science and compared women's representation as contributing authors to their representation in the American Political Science Association. The share of female contributors was relatively consistent with the share of women in the Association, but there was a disparity in participation in edited volumes (52% and 15%, respectively). Perhaps female political scientists establish fewer connections with their male colleagues or are left out of male networks, and perhaps mentoring and forming professional networks might be particularly instrumental for increasing female scientific productivity?

Fertility and family responsibilities could have an adverse effect on both scientific output and impact. Given the typical division of childcare in the home, having children should have more detrimental effect on women's scientific productivity than that of men, especially since academics often work evenings and weekends (Hargens, McCann, and Reskin 1978). However, the empirical findings on the relationship between family matters and productivity are inconsistent. Although some research has found negative effects (for example, Hargens et al. 1978), others have concluded that children have no effect on productivity (for example, Leahey 2006), and still others have even found positive effects (for example, Nakhaie 2002).

In summary, then, the literature is mixed in determining to what extent women are less productive than men and what the causes of a potential productivity gap might be.

Gender Gap in Publication Success?

Are women and men equally likely to get their work published after submitting it to academic peer-reviewed journals? In theory, gender bias in the peer-review system could contribute to a gender gap in observed productivity. A classic study showed that even when the work of a woman was identical to that of a man, the former was judged to be inferior (Goldberg 1968). A number of more recent studies show a tendency toward evaluating members of your own sex more favorably (for example, Cole and Zuckerman 1984; Ferber 1986; Wennerås and Wold 1997).

A central issue is the potential impact of various review policies. A large majority of journals in the social sciences—including *JPR*, since 2002—practice a "double-blind" or "masked" review procedure (in which the identities of reviewers and authors are hidden from each other). The core argument in favor of blinding is that the reviewer should judge an article on its merit rather than the prior reputation or record of the author (Gleditsch 2002). This assumes that high-status authors may get an unfair advantage in single-blind systems.[3] This advantage is modified by anonymous reviewing.

The small literature on the effect of blind reviewing and potential bias regarding gender, race, country of origin, and scholarly status provides mixed evidence.[4] In an experiment conducted at the *American Economic Review,* Blank (1991) found that overall acceptance rates were lower and referees more critical when the reviewer was unaware of the author's identity. While this was consistent with the argument that women fare better under double blind, the estimated effects were small and statistically insignificant.

Budden et al. (2008a) found that following a policy change from single blind to double blind in the journal *Behavioral Ecology,* there was a significant increase in female first-authored papers, a pattern not observed in very similar journals, such as *Animal Behaviour*, which maintained its single-blind policy throughout the same period. Webb, O'Hara, and Freckleton (2008) objected that this finding would have been more compelling if based on the ratio of accepted-to-*submitted* manuscripts. Budden et al. (2008b) admitted that such data on manuscript submissions, acceptances, and rejections would provide more insight, but noted that such information is typically available only to the journal's editorial staff.[5]

In sum, we agree with Blank's (1991:1045) summary of the literature: It provides mixed results, but there is a disturbing amount of evidence consistent with the hypothesis of referee bias in single-blind reviewing.

Decisions to accept or reject necessarily involve editors as well as referees. To the editor, the review process is never blind and different editors need not exercise their prerogatives in exactly the same way. However, "accept" decisions are generally highly correlated with referee ratings, so the editors' latitude is somewhat constrained (Blank 1991). Nevertheless, the gender of the editors might influence the acceptance rate for female authors. In a study of the review process in the *Journal of the American Medical Association* (JAMA), Gilbert, Williams, and Lundberg (1994) found that manuscripts handled by female associate

[3]In many cases, the authorship will, nevertheless, be obvious to the reviewer and increasingly so with the electronic posting of conference papers.

[4]In addition to those reviewed below, see Nylenna, Riis, and Karlsson (1994); Wennerås and Wold (1997); Snodgrass (2006); Whittaker (2008).

[5]Indeed, it might not have been possible to acquire the data for the present article had the authors not been closely associated with *JPR*. However, replication data will be provided, with whatever limitations are necessary to protect the anonymity of the referees and the rejected authors.

editors were rejected at higher rates overall, but that no significant differences were exhibited when matching the gender of the author and editor.[6] Stegmaier, Palmer, and van Assendelft (2011) in a study of the 50 top journals within political science found that women are reasonably well represented in editorial positions in proportion to the ranks they hold in the profession overall, although substantial variation exists across journals.[7]

Gender Gap in Citation Impact?

Citation counts are used as indicators of the visibility, impact, and quality of scientific publications. Recognizing the contributions of other scholars in references is a well-established practice. The number of times an article has been cited is a rough indicator of the number of times other authors have taken note of it.

There is not much literature on gendered citation patterns. In general, output (publication counts) and impact (citation counts) are highly correlated, and Cole and Zuckerman (1984) suggested that gender disparities in citations are due largely to differences in the number of articles. But are there gender differences in terms of the average citations per article?

Some research suggests that scholars are more likely to cite the work of someone of the same sex (Ferber 1986). Even controlling for topic, male scholars cite women less often than female scholars do (McElhinny, Hols, Holtzkener, Unger, and Hicks 2003; Mitchell, Lange, and Brus 2013).[8] Furthermore, a handful of studies have looked at the potential impact of fertility. Hargens et al. (1978) found no significant relationship between fertility and citations. In a more recent study of academics in linguistics and sociology, Hunter and Leahey (2010) found that women have fewer citations, even after controlling for children. Finally, it has been argued that although previous research has found no gender differences in acceptance rates at prestigious journals such as the *American Sociological Review* (Bakanic, McPhail, and Simon 1987), women might, nonetheless, be more reluctant to submit their work to highly visible journals.

In contrast to these studies, some have found that women actually tend to receive *more* citations per paper than men (for example, Long 1992; Ward, Gast, and Grant 1992; Sonnert and Holton 1995; Borrego et al. 2010; Rigg, McCarragher, and Krmenec 2012). Examining the productivity of biochemists, Long (1992) concluded that gender disparities in productivity and citations increase during the first decade of the career but are reversed later in the career. Moreover, Long found that the overall smaller number of citations received by women results from their fewer publications—not from the quality. According to him, papers by women in fact on average received more citations than those by men.

Borrego et al. (2010) in a study of 721 PhDs from Spanish universities (1990–2002) explored the gender differences in scientific output and citations. They found no significant differences with regard to scientific output, but articles authored by female PhDs were cited significantly more often (even when self-citations were excluded). In contrast, a recent study by Maliniak, Powers, and Walter (2013) on citations and publication patterns in the IR literature found that women are systematically less cited than men after controlling for a large number of factors.

In sum, the evidence is inconclusive with regard to possible systematic gender differences in the impact of the average article.

[6]Gilbert et al. (1994) also found that female editors were more often assigned manuscripts from female corresponding authors than were male editors and that female editors used more reviewers per manuscript if sent out for review. Furthermore, male editors used male reviewers more often than female, whereas female editors used both genders at equal rates.

[7]As of 2013, *JPR* has a male editor and a female deputy editor. Among the 14 associate editors, eight are women; and five of the 15 members of the editorial committee are women (33%).

[8]Symonds et al. (2006) found no evidence for gender differences in rates of self-citations.

Some Propositions

Inspired by the previous literature, we have identified five propositions to guide our empirical analyses:

1. *JPR* has published more articles with male authors than with female authors.
2. The gender gap in terms of publications has decreased over time.
3. The overall submission–acceptance ratio was biased against women under the single-blind review policy.
4. There is no significant gender bias in terms of submission–acceptance ratio under the double-blind review policy.
5. Author gender is not associated with citation counts for the average *JPR* article.

Data and Research Design

The data used in this article were collected from *JPR*'s editorial database.[9] We have extracted information for all submitted items and coded gender for all authors and reviewers. Whenever the unit of analysis is author, gender will be the relevant variable. When the unit is submission, we code single vs. coauthorship; whether any or all authors are female; and finally, whether the first author is female.[10]

From 1983 through 2008, 3,207 different authors submitted 3,613 items, of which 1,032 articles by 965 authors have been published on the evaluation of the 9,307 reviews by the 3,800 reviewers involved. We have coded gender for all authors and reviewers. We have also collected data from the Thomson Reuters Web of Knowledge on citations to those articles that eventually were published in *JPR*.

The analysis is based on visual representation of bivariate comparisons, as well as logistic regression models on the outcome of the review process. The outcome of the review process was analyzed with a logistic regression model, and the citation count data were analyzed with a negative binomial regression model.

Results

Past and Present Gender Gap

Of the 947 published articles included in this study, 558 were single-authored by a man and 98 by a woman. Of the 291 coauthored articles, 168 are all-male, 11 are all-female, and the remaining 112 have mixed authorship. Overall, women have contributed to 220 out of the 947 articles, or 23%, as shown in Figure 1.[11] Hence, the first proposition is strongly supported by our data: There *is* a clear gender gap in *JPR*.

[9]The dedicated *JPR* database, from which we have derived our data, was replaced by a commercial manuscript tracking system (Sagetrack, built on ScholarOne) in 2009, and submissions from the final year are not updated. We therefore end our sample of submissions in 2008. For this reason and due to some incompatibility between the *JPR* database and the data from Web of Knowledge databases, the analysis contains 947 published articles and 2,606 rejected items. Three of the articles in our sample were published in 2009.

[10]A small fraction of the names in *JPR*'s database already had gender coded as a variable from an earlier study (Gleditsch, Metelits, and Strand 2003) or for reporting to the editorial committee or PRIO, the journal's owner. The remaining names were coded by the authors, eventually bringing the share of "uncertain gender" cases down to 3.7%. Most of the uncertain cases were coded as men, based on the male preponderance (81%) among the certain cases. Our final analyses have been tested for robustness with the "uncertain gender" category excluded. No substantial differences were detected.

[11]Due to the continuing gender gap, we deliberately use an asymmetric measure here. An article with a minimum of one female author is classified as "Female Author."

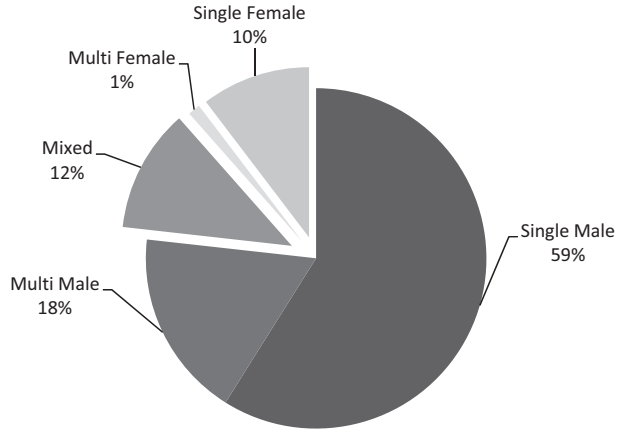

FIG. 1. Published Articles by Gender in *JPR*, 1983–2008

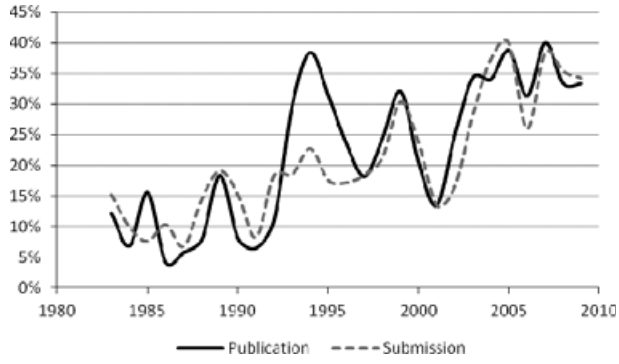

FIG. 2. Share of Female Authorship in *JPR* over Time (*Notes.* Female authorship is defined as an article with at least one female author. Correlation between female authorship in submitted and published articles, r = .85.)

While Figure 1 covers the whole 26-year period, Figure 2 provides data for submission and publication by gender over time. The female share of *JPR* authorship has increased (albeit unevenly) for the whole period, from below 10% in the 1980s to around about 20% during the 1990s, and was in 2008 edging toward 40%.[12] The second proposition is therefore also clearly supported: The gender gap has decreased over time.

This trend in publications might simply reflect a similar gap in submissions. If this is the case, the *JPR* gender gap might only reflect the more general gender gap in the profession.[13] Figure 2 also provides annual data for the female share

[12]While we do not yet have a compatible database for published articles prior to 1983, an examination of the early volumes from 1964 on indicate that female publication was roughly at the same level as in the early 1980s, but only because two female staff members at PRIO published regularly in the journal. Generally, *JPR* articles were much more frequently written in-house in the early period. Once in-house publication dropped off, the female share of published *JPR* articles plummeted, even reaching 0% in 1968.

[13]It would be nice to be able to control for female representation in the discipline, for instance with data on female participation in the ISA, whose annual convention, at least in recent decades, is probably the single most important source of submissions to *JPR*. Unfortunately, such gendered data are only available for a few recent years (cf. Breuning and Lu 2010:243). Although there has been a positive trend in terms of female participation at the ISA conventions over the past few years (35% in 2005 vs. 38% in 2009), the literature suggests that women continue to publish in academic journals at a lower rate than their presence in the discipline (Breuning and Lu 2010).

of submissions. The publication and submission lines are very highly correlated (r = .85), which speaks against a gender bias in the editorial process.

As shown in Figure 3, the number of submissions remained quite stable during the 1980s and 1990s, then sky-rocketed in the next decade. The number of pure male submissions has also increased. To some extent, this mirrors the increase in coauthorship (up from 1.17 authors per article in 1990 to 1.54 in 2008), but it also reflects a significant increase in submissions as such. Other journals have also experienced a sharply increased editorial load. This is probably related to an increasing pressure to publish, now extended to more countries. The share of female submissions has continued to increase even as submissions have gone up generally. The exact mechanism is difficult to pinpoint and might well be exogenous to *JPR*. But it seems too large to be explained as just a function of increased female presence in the fields of peace research and IR.

Acceptance and Rejections

The strongest increase in female submission coincides strikingly with the implementation of a double-blind review policy in the early years of the new millennium. Is this a sign of a latent gender bias in the review process?

To study this, the relevant statistic is a somewhat moving target. The number of submissions to *JPR* has increased much faster than the number of articles per volume, so the rejection rate has increased over time. In 1983, almost 60% of all submissions were rejected, whereas the same figure was 87% in 2007. A comparison of rejection rates across gender must take account of the fact that the increase in female submissions has occurred at a time where the rejection rate is higher.

Figure 4 gives the acceptance rate of articles by the gender of the first author of manuscripts. As with many of the earlier figures, the low number of female authors before the mid-1990s makes for an unstable graph. The right-hand side of the figure presents results that are more robust. With few exceptions, papers with male first authors appear a little more likely to be rejected than articles with female first author, but this difference is rarely significant at the 5% level.

Since female authorship, coauthorship, and rejection rates all correlate, we now switch to a regression model. Table 1 compares four such models. Yearly fixed effects are included but not reported. By itself, the variable female authorship (one or more female authors) has a fairly strong effect on the acceptance rate (Model 2). The effect of female authorship in general is stronger than the effect of female first authorship, which is statistically insignificant (Model 1).

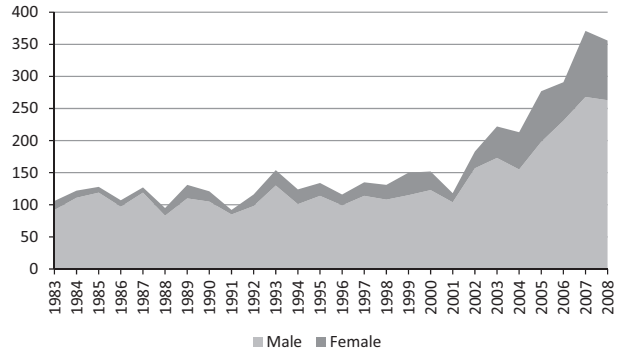

Fig. 3. Submitting Authors over Time by Gender

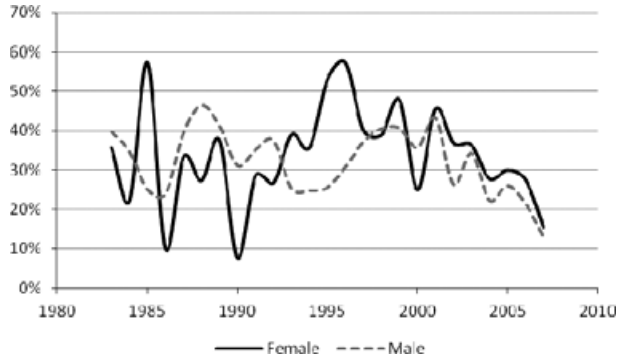

FIG. 4. Outcome Rates in *JPR* over Time, by First Author Gender (*Note.* Correlation between the outcomes for female first author and male first author, r = .19.)

TABLE 1. Positive Outcome of Review Process, Controlling for Single Authorship

	(1)	*(2)*	*(3)*	*(4)*
Female first author	1.164		1.154	
	(0.126)		(0.127)	
Female author		1.413***		1.164
		(0.139)		(0.119)
Single author			0.419***	0.433***
			(0.0403)	(0.0427)
Constant	0.630**	0.612**	1.411	1.367
	(0.131)	(0.128)	(0.322)	(0.315)
Observations	3,540	3,540	3,540	3,540

(*Notes.* Logistic regression results. Figures are odds ratios with *z*-values in parentheses. Stars denote significance: *10%, **5%, ***1%.)

Rather than suggesting that male coauthors should be placed first in order to maximize success, this probably mainly reflects the more common order of things in a multi-authored setting. The reported effect of female authorship picks up the positive effect of coauthorship better than does female first author.

Most of the unsuccessful single-authored contributions are written by men. Including a control variable for single author therefore takes away most of the gender effect (Models 3–4). There is still a gender effect, but it is no longer statistically significant, regardless of where in the sequence of authors a woman appears.[14] These results are robust to the exclusion of up to 10% of the most influential observations and therefore appear to describe the data in general. We tentatively conclude being female is not a decisive disadvantage as far as publishing in *JPR* is concerned. If anything, female authors are more likely to be selected for publication, even when we take coauthorship into account.

Double-Blind Review

The introduction of a double-blind review policy (Gleditsch 2002) coincides with a sudden and large increase in female submission. Given the long-term trends in female submissions and authorship, it seems unlikely that the double-blind

[14]Adding an interaction term in Models 5 and 6 (not reported) adds nothing but noise to the analysis.

policy should have had a major impact on submissions, but we will, nevertheless, pursue this issue a bit further.

Just as there is a gender gap in submissions and publication, there is a (large but shrinking) gender gap in the review process. For 52% of all reviewed articles, all reviewers are men, and for only 2% of the articles, all reviewers are women. Also, a significant number of submissions—1,230, or 35%—were never sent out for review. A few (mainly prefaces, comments, and book reviews but also 84 articles) were accepted without outside review, while most were rejected out of hand. In Table 2, we include two dummies (male review process and no review process). The reference category is a review process with one or more female reviewers.

We find that the presence of female reviewers is uncorrelated with the chance of publication.[15] Furthermore, when we compare the single-blind and double-blind review models, the same non-effect appears. The effect of "All Male Reviewers" on the likelihood of acceptance is weak (and insignificant) during the single-blind period, as is the interaction between female authorship and male reviewers. We therefore conclude against Proposition 3: The overall submission–acceptance ratio was *not* biased against women under the single-blind review policy. Proposition 4 is supported: There is no significant gender bias in terms of submission–acceptance ratio under the double-blind review policy in *JPR*. Hence, we do not find any strong evidence that the acceptance ratio between women and men changed at the introduction of the double-blind policy.

Citation Rates

The final proposition states that we do not expect gender differences in citation rates for articles published in *JPR*. Based on citation data from Thomson Reuters Web of Knowledge, Figure 5 shows the citation numbers (logged) for articles

TABLE 2. The Outcome of the Review Process in *JPR* Controlling for Reviewer Gender and Multiple Authorship

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
	All observations		*Single-blind period*		*Double-blind period*	
All male reviewers	1.004	1.010	1.036	1.066	1.192	1.229
	(0.112)	(0.116)	(0.147)	(0.153)	(0.221)	(0.246)
Not peer-reviewed	0.269***	0.270***	0.367***	0.373***	0.0995***	0.0989***
	(0.0313)	(0.0314)	(0.0529)	(0.0537)	(0.0263)	(0.0261)
Female first author	1.050		0.884		1.417	
	(0.150)		(0.170)		(0.312)	
Female first author	1.046		1.295		0.654	
*All male reviewers	(0.248)		(0.390)		(0.258)	
Female author		1.106		1.053		1.281
		(0.145)		(0.184)		(0.262)
Female author		1.026		1.141		0.681
All male reviewers*		(0.217)		(0.316)		(0.233)
Single author	0.496***	0.508***	0.559***	0.567***	0.440***	0.455***
	(0.0494)	(0.0517)	(0.0724)	(0.0747)	(0.0698)	(0.0741)
Constant	2.985***	2.893***	2.179***	2.070***	0.0212***	0.0210***
	(0.742)	(0.717)	(0.596)	(0.574)	(0.0153)	(0.0153)
Observations	3,540	3,540	1,978	1,978	1,562	1,562

(*Notes.* Logistic regression results. Figures are odds ratios with *z*-values in parentheses. Stars denote significance: *: 10%, **: 5%, ***: 1% DV: Acceptance of article for publication.)

[15]There could be systematic differences in which articles are sent out to female reviewers in the first place. However, we cannot account for such potential selection effects.

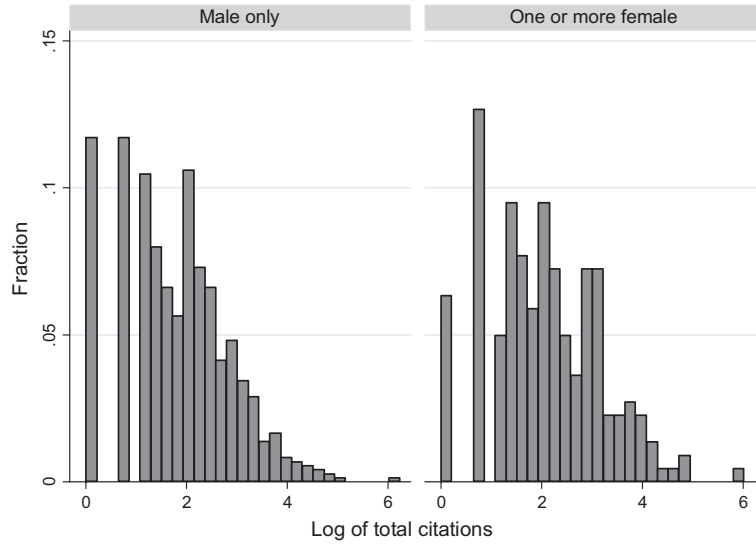

FIG. 5. Citation Rates by First Author Gender

with and without female authorship.[16] Figure 5 shows the distribution of the log of citation numbers for the two article categories.

The two histograms look quite similar. The subset with female authors has a median of 6 compared to 5 for "male only," but the "male-only" graph has more observations at the extremes. On the other hand, the interquartile range for the "male-only" subset is between 2 and 11, whereas the subset with female authors is between 3 and 16. Thus, the typical article with female authors is more frequently cited than the male-only counterpart. Again, this bivariate comparison does not take coauthorship into account. To do so, we again turn to regression analysis.

In Table 3, we include a dummy variable for each volume to control for unobserved factors and, at the same, time exposure (coefficients not reported). We also control for article type, where we particularly expect Special Data Features to be more often cited than other types of articles.[17] Finally, we control for article length and the number of coauthors.

Table 3 shows that single-author articles are much less cited than coauthored articles and that *JPR* Special Data Features are much more cited than regular research articles and other items such as review essays, rejoinders, and responses. Gender is seemingly unrelated to citation rates. The coefficient for female first author and female author in general are ignorable. Nor does the review process —or the lack of any such process—influence the outcome.

Given the increasing level of specialization in the field, it is not unreasonable to expect that coauthored articles in general are better than single-authored articles. Another reason for why we should expect single-authored articles to be less cited is that self-citations are more likely to be counted for coauthored articles, as ISI Web of Science counts citations to all authors as long as the article is included in its bibliography.

[16]We use the log-transformed variable since the untransformed variable is difficult to visualize. For reasons explained in greater detail in our replication file, citations to older articles are underestimated in ISI Web of Science. However, this is captured in the age variable (with two other factors—longer exposure to potential citations and expansion of the list of citing journals).

[17]Article types: Counterpoint, Focus On, Debate, Review Essay, Special Feature, Editorial, and Viewpoint.

TABLE 3. Determinants of Citation Frequency

	(1)	*(2)*
Female first author	0.888	
	(0.0920)	
Female author		0.951
		(0.0922)
No review process	1.008	1.017
	(0.135)	(0.136)
All male reviewers	0.966	0.970
	(0.0861)	(0.0866)
Special Data Feature	3.440***	3.384***
	(0.956)	(0.939)
All non-article items	0.733**	0.734**
	(0.100)	(0.100)
Page count	1.048***	1.048***
	(0.00929)	(0.00934)
Number of coauthors	1.164***	1.178***
	(0.0667)	(0.0695)
Constant	1.706***	1.646**
	(0.826)	(0.359)
Alpha	1.115**	1.117**
	(0.0555)	(0.0556)
Observations	944	944

(*Notes.* Negative binomial regression results. Figures are incidence rate ratios with standard errors in parentheses, ***$p < .01$, **$p < .05$, *$p < .1$.)

In the end, we cannot conclude that there are any systematic differences in citation counts between male and female authors. The fifth proposition is therefore supported.

Conclusions

In this study, we have explored the impact of author gender with regard to publication success, based on a systematic evaluation of submitted and published articles in the *Journal of Peace Research* for the period 1983–2008. Overall, our findings represent good news when it comes to gender equity. We identify a large but decreasing publication gap between men and women in *JPR*. However, we find no evidence of a gender bias against women in the process from submission to acceptance. The third main finding turned out to be a bit more complicated. An article with at least one female author is indeed more likely to be published than one with male authors only. To a large extent, this is due to the role of coauthorship. Why women coauthor more is an important question that we are not in a position to answer with these data. Finally, we find no evidence suggesting a gender bias in terms of citation counts.

Many important questions remain to be explored. First, it would be interesting to expand the study to cover additional journals in the field of IR, to see whether certain subfields display specific gender effects.[18] Further, it would be interesting to explore whether women and men are equally likely to resubmit a manuscript after receiving a major "revise and resubmit" decision and whether there are significant differences between the genders in turnaround time. Moreover, hardly any studies we are aware of have looked at the effect of the gender of the editors (for an exception, see, for example, Gilbert et al. 1994). Finally,

[18]For some discussion, see Kadera (2013).

future studies could expand the citation analysis. In particular, we would like to investigate whether *JPR* articles authored by women are likely to be more or less widely cited by other women and whether there exists a "sisterhood" in citations.[19]

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[19]This will necessitate a major data collection and gender coding of citing authors as well as *JPR* authors.

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