

What makes someone a political methodologist?*

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Abstract

In this essay, I take the perspective that one can understand what it means to be a methodologist by studying the character of the methods community. Using multiple sources of information, including a text analysis of published abstracts from *Political Analysis* and *American Political Science Review*, I find that methodologists are focused on building, assessing, and improving quantitative models and techniques of immediate practical importance to substantive political scientists. However, many women who share this focus do not participate in the community's basic activities, such as attending and presenting at the annual meeting of the Society for Political Methodology. By comparing gender representation in statistics and mathematics departments to that in the methods community, I conclude that nothing about the substance of political methodology is a barrier to gender diversity in the field. However, aspects of the community's discursive culture might contribute to underrepresentation among women and other groups.

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Introduction

What makes someone a political methodologist? In this essay, I take the perspective that one can understand what it means to be a methodologist by studying the character of the methods community, specifically the Society for Political Methodology (SPM) and its annual meeting (POLMETH). The community shares and encourages certain interests, talents, and values; these shared qualities enable methodologists to become active in the subfield and make unique and valuable contributions to political science. However, a considerable number of those who have the skills and interests identified with the political methodology subfield are not active participants within it. The fact that women and racial minorities are underrepresented among methodologists requires us to grapple with the possibility that some of the community's shared values may harm its diversity and long-term viability.

I begin this essay by identifying and describing the core attributes shared by members of the methods community. My description relies on information from the history of the SPM, the qualitative experiences of methodologists (including myself), and quantitative data from ten years of published abstracts in *Political Analysis* and the *American Political Science Review*. I find that methodologists are focused on building, assessing, and improving quantitative models and techniques that are not merely of abstract interest, but of immediate practical importance to studying the substantive problems of political science. Then, I discuss what is required to be considered an active member of the methods community. The founders of the subfield, who made themselves into methodologists, did so by (1) attending, presenting at, and organizing POLMETH, (2) publishing in journals devoted to methodology, (3) serving in SPM offices and on committees, (4) teaching undergraduate and PhD-level courses in research design and quantitative analysis, and (5) staying informed on developments in allied fields. I argue that these activities (which are enabled by the community's shared talents and interests) identify a person as an active methodologist. Finally, I consider why many who share the attributes of methodologists are not active members of the community, particularly among women (Dion and Mitchell, 2012; Shannon, 2014). A

comparison between the political methodology community and departments of statistics and mathematics suggests that (contra a recent argument by Shames and Wise, 2017) a focus on quantitative techniques and inference *per se* cannot explain gender disparities. However, some aspects of the methods community's discursive culture might contribute to underrepresentation among women and other groups.

What characteristics are shared by political methodologists?

What are the core interests, talents, and values shared by political methodologists, defining what Leeper (2017, p. 5) calls the *prototype* of a member of the subfield? To begin answering this question, it is helpful to consult historical narratives of the genesis of the Society for Political Methodology (including the contribution in this volume by Mitchell and Achen). As Franklin (2008, p. 797-798) notes, the society was created by:

...an already established group of political scientists who felt their work was underappreciated and poorly supported by the professional organizations and conferences of the day. ...SPM was also about extending the boundaries of political methodology by providing settings in which one's research could be valued for its methodological contributions alone, and establishing the full legitimacy of methodology as a field within political science.

Given this genesis, we should not be surprised that the political methodology community has somewhat different priorities than other subfields of political science, and that these priorities focus more on *how* we learn about politics than *what* we learn about it. Yet the community is substantially more connected to substantive political science than someone purely interested in how evidence is constructed, like a statistician or a philosopher of science.

Consider two idealized forms of scientific scholar: the *scientist* and the *engineer*. *Scientists* focus on generating new and abstract information about some topic, usually a very

narrow topic, without necessarily considering immediate applications or spending the time and energy required to convert an abstract idea into a practical implementation. *Engineers*, by contrast, tend to be less concerned with the novelty of the underlying science and more concerned with creating novel and important *tools* using that science. Of course, probably no real person in any field is a pure scientist or engineer as I have defined these terms; prospective applications are often in the minds of scientists and engineers sometimes need to extend abstract knowledge in order to make a new tool work. But in my qualitative (but non-systematic) impression of the community acquired over ten years of active membership in the SPM,¹ I have observed that political methodologists bear a closer resemblance to engineers than to scientists. Moreover, the tools that methodologists build are designed to solve the problems posed by substantive research in political science.

My impression is that political methodologists, in the main, are in the business of:

1. studying the practical problems that come up in political science research, including limitations of widespread techniques or flaws in common practices;
2. bringing these problems to the attention of the community; and
3. developing and disseminating solutions for these problems that can be easily used by political scientists (such as statistical models and analytical procedures, plus software packages to implement these models and procedures).

My impression is very close to that of Mitchell and Achen (2017, p. 3), who state that “methodologists identify research questions and theories in political science that have encountered methodological difficulties of a statistical kind, and they develop new strategies, tools, and estimators to better answer those questions.” These tasks are closer to the problem-solving, tool-building tasks of the engineer. As noted by King (1991, p. 8), it

¹My experiences in the community include presenting four papers and seven posters (in addition to periodically serving as a discussant) at POLMETH. I have also served as an organizer for several methodology conferences. In 2016, I was chair of the Program Committee and host for the 2016 POLMETH meeting. Before that, I was Section Head for Methodology at the 2015 MPSA conference and again at the 2016 SPSA conference.

is not enough to simply import ideas from other fields and apply them directly to political problems; “[m]ethodologies are not always universally applicable; they must be adapted to specific contexts and issues if data are to be put to good use.” The mission of tailoring analytical tools to the contexts and issues interesting to political scientists is a core part of the research program of methodologists.

The three tasks of methodologists I identify are similar to the tasks of political methodologists defined by Box-Steffensmeier, Brady and Collier (2008) in their introductory chapter to the *Oxford Handbook of Political Methodology* (p. 3), where they describe how a methodologist would approach the task of studying the substantive political topic of “revolution.”

Methodology provides techniques for clarifying the theoretical meaning of concepts such as revolution and for developing definitions of revolutions. It offers descriptive indicators for comparing the scope of revolutionary change, and sample surveys for gauging the support for revolutions. And it offers an array of methods for making causal inferences that provide insights into the causes and consequences of revolutions.

Note that their description of methodology closely mixes substantive and technical concerns; the contributions of the methodologist are oriented consciously toward the requirements and needs of substantive research and those who perform it. The desire to closely pattern the work of methodologists against the particular needs of substantive political science was present at the creation of the community: Franklin (2008, p. 797) notes that “SPM set as its goal the development of a political methodology devoted to questions arising from problems unique to political data rather than borrowing solutions from other disciplines whose concerns might only tangentially reflect the concerns of political scientists.” In a similar vein, King (1991) emphasizes that methodology ought not be simply a branch of statistics, but closely wedded to the substantive questions that interest political scientists and the methodological problems they encounter while they study those questions (p. 1):

If political methodology is to play an important role in the future of political

science, scholars will need to find ways of representing more interesting political contexts in quantitative analyses. This does *not* mean that scholars should just build more and more complicated statistical models. Instead, we need to represent more of the essence of political phenomena in our models.

As a consequence of the engineering orientation of the subfield, it is my observation that political methodologists tend to be more knowledgeable than statisticians about programming, research design, epistemology, and the substance of politics. It is informative that two of the major statistical software companies (StataCorp and SPSS, Inc.) were founded (and their first software versions written) by social scientists.² For the same reason, I have observed that methodologists tend to be less knowledgeable than statisticians about measure theory, proof construction, and abstract mathematics compared to statisticians: mastery of these ideas is not as important for the engineering tasks of tool-building and application when compared to other skills.

Text analysis of *Political Analysis* abstracts

We can study the scholarly priorities and values of the methodology community more systematically by examining the work published in *Political Analysis*, “the official journal of the Society for Political Methodology and the Political Methodology Section of the American Political Science Association” (Cambridge University Press, 2017*a*). As the only peer-reviewed academic journal formally associated with the SPM and with a mission to “publish peer reviewed articles and letters that provide original and significant advances in the general area of political methodology” (Cambridge University Press, 2017*b*), it is plausible to assume that the journal’s content reflects the values and priorities of the community it serves.

I created an original data set of the abstract text for all 276 articles published in *Political Analysis* in the last ten years (between 2007 and 2016). After initial data cleaning and

²Stata was created (along with a collaborator) by William Gould, who holds a PhD in Economics from the University of California, Los Angeles (Cox, 2005; Newton, 2005). SPSS was created (along with two collaborators) by Norman Nie, who held a PhD in political science from Stanford (Urton, 2015).

processing,³ I converted all words to stems,⁴ then constructed a term document matrix to determine the most frequently occurring terms in the corpus of abstracts. To create a more readable output, I replaced the stems with their most frequently occurring variant. Finally, I used the `wordcloud` library (Fellows, 2014) to create a word cloud with the 100 most frequently occurring words in the corpus; this word cloud is shown in Figure 1. The size and shading of the word is proportional to its frequency of appearance, with larger and darker words appearing more frequently.

The content of *Political Analysis* abstracts supports the view that the political methodology community values building, assessing, and improving quantitative empirical models that are designed to measure, explain, and predict political phenomena. The most frequently occurring stem word in the corpus is “model,” which appears 453 times in the data set. Of the 100 most frequently occurring words in the corpus of abstracts, at least 15 suggest a mathematical, statistical, or quantitative approach.⁵ At least 17 of these words suggest the assessment of a model or method’s performance, including comparative assessment.⁶ At least 18 of the words indicate an interest in measurement, causal explanation, or prediction.⁷

A distinction between political methodologists and statisticians residing in mathematics, statistics, or computational science departments is also suggested by this analysis. Note

³Before reading the data into R, I used Excel to remove curly quotes and apostrophes; I replaced these characters with standard quotes and apostrophes respectively. I also converted em dashes (—) and en dashes (–) to spaces. I read this data into Microsoft R Open 3.4.0 (R Core Team, 2017; Microsoft R Application Network, 2017) using the `tm` library (Feinerer and Hornik, 2017; Feinerer, Hornik and Meyer, 2008); I had replaced occurrences of the phrase “monte carlo” with “monte-carlo” so that `tm` would treat the phrase as a single unit. I converted all words to lower case, removed punctuation, and removed common stopwords from the abstracts using utilities in `tm`. In addition to English stopwords included in the `removeWords` utility in `tm`, I also removed the following additional words common to academic abstracts: article, use, using, can, one, two, three, four, five, six, first, second, and third.

⁴As described by Porter (1980), a *stem* is the root of a word that remains when suffixes are removed. For example, the words “connect,” “connected,” “connecting,” “connection,” and “connections” share the same stem: “connect.” Stemming words in a corpus allows us to group superficially different words that all share a common meaning.

⁵These words are: estimates, data, measures, variables, survey, statistical, sample, error, simulations, random, observations, regression, number, Monte Carlo, and Bayesian.

⁶These words are: model, methods, approach, assumptions, proposed, problems, bias, error, compare, relative, performance, simulations, alternative, validity, correct, Monte Carlo, and assess.

⁷These words are: estimates, measures, effects, test, experiments, error, treatment, causal, inference, process, dependence, predictions, regression, validity, correct, identification, selection, and theoretical.

some words that do *not* frequently occur in *Political Analysis* abstracts, words like “theorem,” “algorithm,” “asymptotic,” “consistency,” “likelihood,” and “eigenvalue”—all words that appear in titles of articles in the 2017 volume of *Annals of Statistics*.⁸ Certainly, proofs and algorithms are created and used by political methodologists. But the focus of work in the methodology community is on adapting and applying quantitative methods to the substantive problems of political scientists, not devising new abstract statistical theory. On the other hand, seven of the 100 most frequently occurring words in *Political Analysis* abstracts, words like “election” and “parties,” do specifically pertain to politics and particularly electoral politics.⁹

Uniquely methodological words: comparing *Political Analysis* abstracts to those of the *American Political Science Review*

A bit more can be learned by comparing the representation of words appearing in *Political Analysis* abstracts to those appearing in abstracts of a general interest political science journal during the same time frame; such an analysis enables us to distinguish those words that are peculiar to methodologists from those common to all political scientists. To that end, I analyzed an original data set¹⁰ containing all 460 abstracts from the 2007-2016 volumes of *American Political Science Review*. I cleaned and processed this data, combined it into a single corpus with the *Political Analysis* abstract text (with a variable identifying the source of each abstract), reduced the words to stems, analyzed the text via creation of a term document matrix, and then de-stemmed words using the most frequently occurring variant among *Political Analysis* abstracts.¹¹ Rather than study overall word frequency, as

⁸Titles and abstracts for Volume 45, Numbers 1-4 of the *Annals of Statistics* are available at <http://projecteuclid.org/all/euclid.aos>.

⁹These words are: political, vote, election, parties, policies, legislative, and social.

¹⁰This data was collected by my research assistant, Samuel York.

¹¹For this analysis, I use Microsoft R Open 3.4.0 with the `quanteda` and `readtext` libraries (Benoit and Obeng, 2017; Benoit et al., 2017) instead of `tm`; these packages facilitate easy comparison of the two text corpora. In addition to removing stopwords, punctuation, numbers, and the collection of words noted in footnote 3 via the `dfm` function, I also removed the words “Signorino” and “paper” from the corpora; if not removed, these words would appear in the word cloud in Figure 2. Finally, `dfm` also creates the term

in Figure 1, for this analysis I determine the ratio of how often the word occurs in *Political Analysis* abstracts relative to how often it occurs in *American Political Science Review* abstracts.¹² The result is shown in Figure 2; larger and darker words occur comparatively more frequently in *Political Analysis*. Figure 2 strongly supports the conclusions drawn from Figure 1: methodologists are likely to discuss and assess quantitative approaches to modeling, measurement, and causal inference with an eye toward application and practice. Words like “simulations,” “monte carlo,” and “Bayesian” are even more prominent than in Figure 1, but words like “likelihood” and “asymptotic” are still absent.

How does one become an active member of the methods community?

How does a political scientist with some of the interests and skills identified in the prior section of this paper become an active member of the methods community? At a certain point in the discipline’s history, there was no such community and few people¹³ were recognized as methodologists:

When [*Political Methodology*] began in the mid-1970s, methodology was more of ten an avocation than a vocation. No political science journal welcomed methodological articles, and many journals rejected them out of hand. Certainly no Political Methodology Society existed to give shape and organization to the needs

document matrix (referred to in this software as a “document-feature matrix”). Note that, for this analysis, the cleaned *Political Analysis* data is read into R through the `corpus` function in `readtext`, merged into a combined corpus with the *American Political Science Review* text, and then has punctuation, numbers, and various words removed via the `dfm` function; no text is processed through `tm` first. The use of different software packages may result in minor differences (e.g., in how words are stemmed) between Figures 1 and 2.

¹²The *relative* frequency of each word’s occurrence f_X in its own corpora X is calculated using `dfm_weight`; I then compare these frequencies by calculating $CF = f_{PA}/(f_{APSR} + \epsilon)$ for each word, where ϵ is the smallest nonzero value of f_{APSR} in the data set. The comparative frequency CF determines the size and color of the word in Figure 2.

¹³In this volume, Mitchell and Achen (2017, p. 2) point out that the majority of political scientists in the 1960s and 1970s who thought of themselves as methodologists had been hired to teach something else.

of political methodologists (Achen, 1985).

Yet now, around 200 people attend the annual POLMETH meetings and *Political Analysis* is the journal with the fifth-highest impact factor in political science, just over *American Political Science Review* (Thomson Reuters, 2017). Obviously, there was a point at which a substantial number of people who were primarily identified with some other subfield of political science became methodologists, both to themselves and in the eyes of the wider discipline.

In reading several histories of the SPM (Beck, 2000; Franklin, 2008; Jackson, 2012; Mitchell and Achen, 2017), it is apparent that the founders of the subfield—those who initially defined what it meant to be a methodologist—were people who wanted to:

1. think and write about improving inference in political science in journals that prioritize discussion of methodology;
2. regularly attend and present research at conferences that focus on and prioritize the discussion of methodological issues in order to exchange ideas with other people interested in inference in political science;
3. teach undergraduate and PhD-level courses in research design and applied statistics;
4. stay abreast of new developments not just in political methodology but also in the allied fields of statistics, econometrics, computer science and applied mathematics, and other areas in hopes of adapting these methods fruitfully to the problems of political scientists; and
5. serve in the various capacities that sustain the functioning of the SPM.

Doing these things distinguished the initial members of the subfield as members of the methodology community. Although much has changed since the founding of the SPM, I agree with Leeper (2017, p. 7) that they continue to define active membership in the methodology community. For example, being an active methodologist in the current era means publishing

work in *Political Analysis* and the Workshop of the *American Journal of Political Science* but also *Political Science Research and Methods* and similar journals. It means regularly attending and presenting new research at POLMETH as well as regional conferences that share its mission, such as the St. Louis Area Methods Meetings (SLAMM) or Northeast Political Methodology Meeting (NEMP). Therefore, to be a political methodologist, I argue that one must do (at least some of) the five things on this list.

And first, one must do the things that enable a person to do these things later on. To link back to the previous section of this paper, one presumably *wants* to (for example) publish in *Political Analysis* because they share the interests and values of the community it serves, and one *is able* to do so because they have acquired the community's shared skill set. It is fair to say that one does not simply publish an article in *Political Analysis*¹⁴ without first acquiring some of the necessary mathematical and statistical background¹⁵ and reading deeply into the related methodological literature. A good (and probably necessary) start in joining the community is to regularly attend the POLMETH meetings; to paraphrase Woody Allen,¹⁶ eighty percent of being a methodologist is just showing up. It turns out that “just showing up” is surprisingly rare: as Achen and Mitchell report in this issue (based on work by Dion and Mitchell (2012)), historically most attendees of the POLMETH conference have not been repeat attendees (only 37.5% of men and 44.4% of women attended the conference at least twice between 1992 and 2010).

¹⁴Thanks to Sean Bean for suggesting this phraseology.

¹⁵I have written in the past about what I see as the ideal preparation for a PhD student seeking to study political methodology (Esarey, 2013); to summarize, an undergraduate minor in mathematics with some extra coverage in statistics and probability theory, programming, and economics is close to what I see as ideal.

¹⁶See Weintraub (2008).

Identity, group dynamics, and descriptive representation among political methodologists

In the introduction, I noted a distinction between sharing the interests, talents, and values of methodologists and being an active member of the methods community. One particularly visible group of scholars who share many characteristics of political methodologists identified in the first section of this essay, but many of whom are less active in the SPM/POLMETH-centered methodology community, are attendees of the women-only Visions in Methodology (VIM) conference (Visions in Methodology, 2017).

There are many possible reasons why many women who are apparently a good fit with POLMETH and the SPM choose to limit their active involvement with that community (e.g., Shannon, 2014). One possible explanation raised in a recent article by Shames and Wise (2017) is particularly troubling:

Recent research on the lack of women entering two key male-dominated fields (i.e., elective politics and engineering) suggests that the stumbling block is not a lack of ambition, as previous work suggested, but instead a lack of perceiving the social importance of the work involved. ...If political science is reduced to competitive discussion over mathematical techniques with a macho ‘my n is bigger than yours’ attitude, it likely will continue to be a majority-male discipline. This also risks turning off many men who value qualitative methods (or even simple rather than complex statistics) and may feel increasingly left out of the club. ...when substance becomes subordinate to methods, and when methodological discussions seem competitive and nitpicky rather than collaborative and constructive, we want to run in the opposite direction. (pp. 819-820)

This argument is challenging to pin down; it appears to mix three issues which are conceptually distinct:

1. the competitive or argumentative tone of discussions at POLMETH and among methodologists generally;
2. the focus on studying quantitative rather than qualitative methods by those within the methods community; and
3. the idea of primarily focusing on identifying and solving methodological problems in political research instead of matters of “substance,” presumably including developing theories and drawing conclusions about political behavior and policy.

I address each aspect of this argument in turn.

The culture of the SPM and POLMETH

The competitive and argumentative tone of POLMETH was present from the beginning: Franklin (2008) characterizes the environment at the 1984 conference as “intense,” complete with “trenchant” critique and “blistering criticism” (p. 810). Although my experiences at POLMETH seem more tame than the recollections of senior colleagues, I think it is fair to say that the spirit of critical exchange is alive and well.¹⁷ By contrast, VIM was created in part to “present research in a friendly, positive environment” (Visions in Methodology, 2017).

The chance to receive honest, direct, and useful criticism from a discussant (who typically has 15-20 minutes to make a presentation of his/her own) and the audience (typically allotted about 30 minutes for Q&A) is one of the things I most value about presenting at POLMETH and being in the political methodology community more generally. Such feedback provides the opportunity to seriously improve one’s work *before* encountering anonymous reviewers. Although I have received useful feedback at other conferences, my experience is that POLMETH is exceptional in this regard. It is normal for new attendees at POLMETH to take time to acclimate both to the critical environment and to being a new arrival in a relatively

¹⁷See also Shannon (2014) for a discussion of similar issues.

small and tightly-knit community. Awkwardness is common, but it dissipated over time for me.

Unfortunately, sometimes matters progress beyond awkwardness. Shames and Wise (2017, p. 816) share a relevant anecdote from the 2014 POLMETH at the University of Georgia:

The first day’s lunch included a “Roundtable on Diversity within the Society,” which was encouraging for a female graduate student studying political methodology. Yet, in the Q&A session, a well-known male professor suggested that diversity was irrelevant and that the issue was simply the lack of methods training at the undergraduate level. ...When our attendee suggested in response that political methodology “wasn’t rocket science” and could be taught to students with little mathematical background, one male attendee yelled “Yes, it is!” and many others responded with jeers and taunts.

I was a presenter on that plenary panel and, net of a few details, my memory of this event is similar. My recollection is that the experience was very unpleasant to witness—not because the exchange was contentious, but because the nature of the exchange seemed to short circuit rather than enable critical discussion. I did not learn anything from this experience about how well PhD students without a mathematical background can assimilate and apply quantitative methods, and I am afraid of what newcomers to POLMETH thought about methodologists after that exchange.

As should be clear from the previous sections of this paper, I do not believe that this anecdote encapsulates anything about the core values and priorities of the community. I also reject any idea that it is necessary to abandon a focused and critical exchange of ideas to avoid events like the one in the anecdote. This story does, however, provide one explanation for why some scholars who share the core interests and values of methodologists choose not to remain active within the SPM/POLMETH-centered community. Although I find that response to be reasonable, my view is that choosing to engage with the community and

voice these concerns is more likely to make the community welcoming to newcomers—while preserving its tradition of honest critique and its focus on inference—compared to choosing to disengage.

The quantitative and epistemological focus of methodology

What of the second and third aspects of Shames and Wise’s (2017) argument: are quantitative and methodological research inimical to women *per se*? As the first section of this paper lays out, building, assessing, and improving quantitative empirical models relevant to political research are core goals for a political methodologist.¹⁸

I believe that a comparison with statistics, a discipline with an even more abstract and quantitative focus than the political methodology subfield, undermines the argument that being primarily concerned with methods and inference tends to reinforce gender disparities. If it is the case that focusing intensely on the development of new quantitative models for the analysis of substantive problems is in and of itself off-putting to women, we should see similar levels and changes in the representation of women in statistics that we do in political methodology. However, statistics as a field is much more descriptively representative of women than political methodology. Moreover, statistics departments have achieved impressive gains in gender diversity over the last twenty-five years while female representation at POLMETH has stayed almost the same during the same time period. Even departments of mathematics, which is generally even more abstract and less-concerned with practical application compared to statistics, have nearly doubled their proportion of female full-time faculty over this period. Consider Figure 3, which combines evidence from two sources.

¹⁸As a side note, I am inclined to reject the idea implicit in Shames and Wise’s third point that the substantive importance or meaningfulness of a research project can be considered separately from its scientific soundness. As research designs typically require tradeoffs to be made among epistemological virtues (e.g., internal validity vs. generalizability), I think a strong argument can be made that preferring certain scientific virtues lexicographically over others is harmful to our substantive understanding of a topic. However, and despite this argument, the scientific limitations of a study are pertinent to its substantive value; indeed, I think this argument relies upon the idea that substantive and methodological concerns are ultimately inseparable. In prior work (Esarey, 2014), I argued that episodes in the history of social science research show that questions or problems encountered in substantive research are often the direct motivation for developing new methodologies and tools.

The first source of data in Figure 3 is an annual American Mathematical Society survey of faculty in the mathematical sciences, including data on the proportion of female full-time faculty holding a PhD in “U.S. departments (or programs) of statistics, biostatistics, and biometrics reporting a doctoral program” as well as the proportion of female full-time faculty holding a PhD in “doctoral-granting departments of mathematics” not including departments of statistics, applied mathematics, or operations research (Loftsgaarden, Maxwell and Priestley, 2001, p. 828). In Figure 3, I have reported these proportions for all surveys conducted between 1990 and 2015.¹⁹

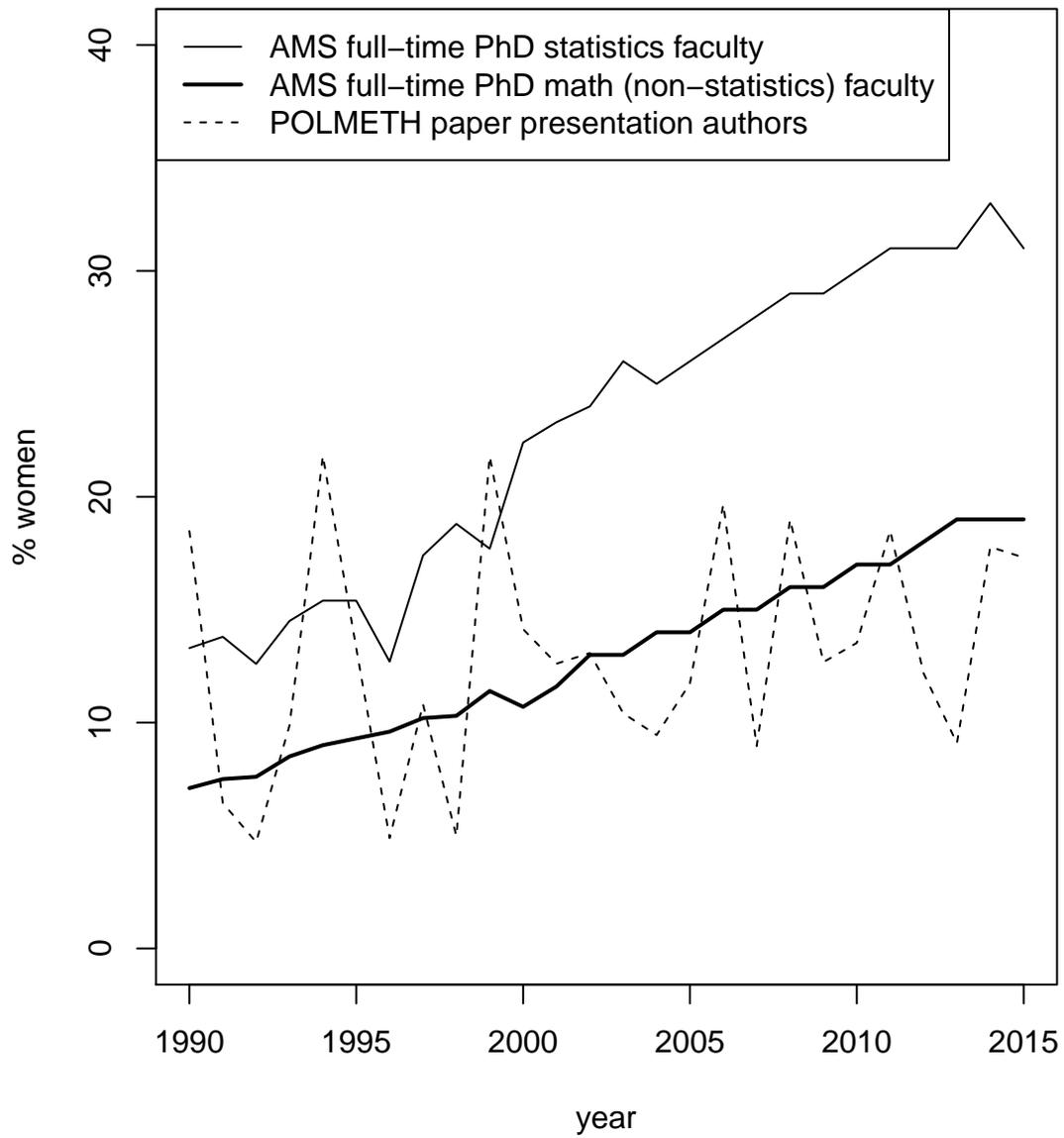
The second source of data is a study conducted by Dion and Mitchell (2012), whose results were published in the *Washington Post* (Mitchell, 2013) and are also featured by Mitchell and Achen (2017) in this symposium. Mitchell and Dion coded the proportion of female authors of papers presented at POLMETH relative to the total number of authors for all presented papers in the program. Although the data were presented only in graphic form, I was able to convert the data to a numerical form using *WebPlotDigitizer* (Rohatgi, 2017). Furthermore, although the data were only available until 2012; I accessed the websites of the 2013-2015 POLMETH conferences to manually update the data.²⁰ Obviously, not all faculty members who identify as methodologists present papers at POLMETH. However, POLMETH restricts panel presentations to papers with faculty members as primary authors (though graduate students are sometimes co-authors). Moreover, given that I have defined the methodology community as being organized principally around the POLMETH conference (and the SPM), the population of presenters at POLMETH is a *prima facie* valid sampling frame in which to measure the characteristics of the target community.

Figure 3 shows that, in statistics departments, the proportion of full-time faculty with a PhD who are women has been rising steadily between 1990 and 2015. Regression analysis

¹⁹The data from these surveys were published in issues of *Notices of the American Mathematical Society* roughly contemporaneous with the survey date. The data are available at <http://www.ams.org/profession/data/annual-survey/facsize> (American Mathematical Society, 2017).

²⁰Some of these programs are no longer available online as of this writing. However, copies of the programs are available in the replication file for this paper.

Figure 3: Female Representation among Full-time Doctoral Statistics Faculty, Full-time Doctoral Mathematics Faculty (excluding departments of Statistics and Applied Math), and POLMETH Paper Authors



shows that, on average, this proportion increases by 0.88 percentage points per year over this period ($p < 0.001$, two-tailed). A similar result holds for full-time mathematics professors, where the proportion of women has grown by 0.50 percentage points per year ($p < 0.001$, two-tailed). By contrast, the proportion of women authors on papers presented at POLMETH has grown much more slowly between 1990 and 2015. Regression analysis shows that the proportion of women authors has increased on average by 0.17 percentage points per year, a growth rate statistically indistinguishable from zero ($p = 0.260$, two-tailed). Moreover, the 0.71 percentage point difference between the growth rate of the proportion of women among full-time statistics faculty and the growth rate of female representation among POLMETH paper authors is statistically significant ($p < 0.001$, two-tailed). The 0.33 percentage point difference in growth rates between full-time math faculty and POLMETH authors is also statistically significant ($p = 0.031$, two-tailed).

There are many possible reasons why statistics and mathematics departments have managed to increase the proportion of full-time doctoral faculty who are women by more than double between 1990 and 2015 while POLMETH has not been able to achieve similar gains in the proportion of women authors of presented papers.²¹ It could be, for example, that mathematics departments tend to disproportionately recruit women who have interest and talent in math, and these women then gravitate toward more substantively applied and collaborative specializations (like statistics) rather than “pure” mathematics (Schulte, 2014). By contrast, students who enter a political science graduate program are usually *not* interested in in math, and therefore women who gravitate toward substantive specializations do not end up as methodologists.²² The representation of women in mathematics departments is considerably lower compared to statistics departments, which is consistent with this argument. However, the growth of women’s representation among faculty members in mathematics de-

²¹There were 17.7 percentage points of growth in the proportion of women among full-time doctoral statistics faculty, starting from 13.3% women on faculty in 1990 and rising to 31% in 2015. There were 11.9 percentage points of growth in the proportion of women among full-time doctoral mathematics faculty, starting from 7.1% women on faculty in 1990 and rising to 19% in 2015.

²²I thank Elizabeth Barre for suggesting this possibility to me.

partments has still been over twice as fast compared to the growth rate among POLMETH paper authors. It may be that mathematics and statistics departments are making more strenuous or more effective efforts to recruit women compared to the political methodology subfield.

We need not resolve the question of *why* we see the results in Figure 3 in order to rule out one important possibility: that a primary focus on inference and quantitative model development is a barrier to increased gender diversity in the field. Statistics departments have evidently achieved substantially closer gender parity on their faculty than political methodologists despite being a field at least as focused on abstract model building and assessment. Even mathematics departments, which are still far from gender parity, have increased women's representation on faculty much faster than political methodologists have increased representation among female authors featured at our annual conference. As a result, I believe it is reasonable to conclude that POLMETH and the SPM can do better on descriptive representation without surrendering this core aspect of their identity.

Conclusion

In summary, political methodologists care about and undertaking the work that is central to the subfield: building, assessing, and improving quantitative empirical models that are designed to measure, explain, and predict political phenomena. But being an active member of the methods community means doing the things that people in the group do, including and especially (1) exchanging ideas and honest criticism at the POLMETH conference and other thematically related conferences, (2) publishing about inference in political science in *Political Analysis* and the community's other journals of record, (3) providing service to the community through the various operations of the SPM, (4) teaching undergraduate and graduate courses in research design and quantitative methods, and (5) keeping up with relevant developments in econometrics, statistics, and other related areas.

I believe that being a methodologist is compatible with helping to change those aspects of the community which hinder its openness to newcomers and interfere with the pursuit of its core mission. However, this does *not* mean abandoning the community's shared focus on the problems of inference and quantitative modeling, as these priorities do not in and of themselves obstruct the growth and diversification of the community. And all these things matter because, as I hope the experience of the founders of the Society for Political Methodology illustrates, participation in the community enhances the capacity of its members to improve the quality of scientific and quantitative work done in the study of politics.

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