

Quantifying the Gender Gap: An Empirical  
Study of the Underrepresentation of Women in  
Philosophy

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## Abstract

The lack of gender parity in philosophy has garnered serious attention recently. Previous empirical work that aims to quantify what has come to be called “the gender gap” in philosophy focuses mainly on the absence of women in philosophy faculty and graduate programs. Our study looks at gender representation in philosophy among undergraduate students, undergraduate majors, graduate students and faculty. Our findings are consistent with what other studies have found about women faculty in philosophy, but we were able to add two pieces of new information. First, the biggest drop in the proportion of women in philosophy occurs between students enrolled in introductory philosophy classes and philosophy majors. Second, this drop is mitigated by the presence of more women philosophy faculty.

## Introduction

In March of 2000, the National Center for Educational Statistics reported that women make up twenty-one percent of full-time faculty in philosophy [1], a much smaller percentage than for any of the other humanities. On the plausible assumption that the intrinsic demands of the discipline are not gender-specific, it is reasonable to ask why there aren’t more women in philosophy. We are by no means alone in wondering. The lack of gender parity in philosophy has garnered serious attention recently. Examples of empirical work on the topic include studies that attempt to quantify the under-representation of female faculty in philosophy [2] and research that investigates why female philosophy faculty do not attain the same ranks within academia in proportion to their male counterparts [3,4]. Additionally, some work has been done which shows that publication in top journals by female philosophers is less than the expected rate given the percentage of women in the profession [3].

Potential explanations for these effects have begun to surface, some of which suggest that relatively extrinsic, social factors such as stereotype threat, evaluation bias, or implicit bias are to blame [3]. Others have hypothesized that women's different philosophical intuitions about key thought experiments make the philosophy "game" an alien experience for many women students [5,6].

We find these theoretical explanations intriguing and often convincing. However, we also think it is premature to theorize, because we do not yet have an accurate picture of what needs to be explained. This is because, until now, most of the data we have are about the gender gap in philosophy at the *faculty* level. But we do not actually know that the gender gap originates at the faculty level; it may begin much earlier in the academic hierarchy.<sup>1</sup> In order to develop useful theoretical explanations for the under-representation of women in philosophy, we need to be well informed about the phenomena in need of explanation. This study thus looks at the spectrum of undergraduates, graduate students, and faculty at philosophy departments from across the United States, in an effort to see where the gender gap originates, which may in turn help to shed light on potential causes and remedies.

## Methods

Before we began data collection, appropriate institutional review board (IRB) members were contacted and confirmed that official IRB approval was not necessary. The data we collected was not individualized, and had no identifiers whatsoever. Ideally, information on the

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<sup>1</sup> Indeed this is just what Buckwalter and Stich (2010) [5] hypothesize, in part based on our data (see pp. 31-2). Buckwalter and Stich are thus an exception to the tendency to focus on faculty and graduate students. They report their own data from undergraduate enrollments in philosophy courses at Rutgers University. Their findings are consistent with ours, but their data (focused as it is on a single institution) is quite limited. .

gender proportions within different disciplines in academia should be publicly available. It is our hope that this study and ones like it, motivate such openness within institutions.

Preliminary research indicated that there are approximately 130 institutions in the United States that grant doctoral degrees in philosophy [7]. Of those, ninety-eight institutions make their contact information available online. In March through May of 2011, we contacted registrars' offices, as well as the chairs and administrative heads of these philosophy departments via email. We requested gender breakdowns from the spring term for each of the following: 1.) students enrolled in all introductory philosophy courses, which were defined as any course students normally take in their freshman or sophomore year that do not have prerequisites; 2.) students who were declared philosophy majors; 3.) philosophy graduate students; and 4.) philosophy faculty by title (full, associate, assistant, or adjunct). Letters sent to registrars' offices also requested the same data for biology, mathematics, psychology, and religion departments to see if we could obtain sufficient data for comparison purposes.

Additionally, we consulted the U.S. News and World Report rankings for liberal arts institutions and selected the top sixty-four colleges. Letters were again sent via email to both philosophy departments and registrar's offices at these institutions. As with the doctoral programs, chairs and administrative heads of philosophy departments were contacted directly.

We requested all the same data, except for data about graduate students. Letters sent to liberal arts institution registrars' offices asked for the same data for biology, mathematics, psychology, and religion departments, again for possible comparison purposes.

## Results

The response rate for letters sent to registrars' offices at doctoral-granting institutions regarding gender breakdowns in philosophy was nearly 33%, with 32 out of 98 institutions submitting at least one of the requested pieces of information. Out of these 32 responses, 12 institutions sent introductory course data, 25 sent undergraduate major data, 31 sent graduate student data, and all 32 sent data on faculty. The response rate from these letters regarding the same gender breakdowns in biology, mathematics, psychology, and religion was 9% (9 out of 98 institutions). Due to this low response rate for non-philosophy departments, we did not do any comparative analysis with these disciplines.

The response rate for philosophy departments at liberal arts institutions was 38%, with 24 out of 64 institutions submitting data. Of these 24 liberal arts institutions, 20 sent introductory course data, 24 undergraduate major data, and all 24 sent data on faculty. The response rate from the letters to registrars' offices regarding the same gender breakdowns in biology, mathematics, psychology, and religion was 5% (3 out of 64 institutions). Again, due to this low response rate for non-philosophy departments, we did not do any comparative analysis with these disciplines. Thus, all of our results are restricted to gender breakdowns in philosophy.

There were no significant differences in the results between PhD-granting institutions and liberal arts colleges. Therefore, we have collapsed across all institutions and will be reporting on these results. The data reported below, then, are from 56 institutions, representing 11,246 students from philosophy introductory courses, 3,443 students who are declared philosophy majors, 1,359 graduate students in philosophy programs, and 711 philosophy faculty members.

In the instance where we paired observations within institutions, the bivariate correlations between the proportion of female introductory students and majors, majors and graduate students, and graduate students and faculty were all non-significant. This lack of statistical

dependence for ordered pairs of observations within institutions led us to treat these observations as independent when performing subsequent analyses.

[Insert Figure 1 about here]

Performing a simple linear regression on the proportion of women across academic standing revealed that the proportion of females reliably decreases as one moves through each level in the academy, from introductory courses through the faculty population ( $r^2=.15$ ,  $p<.001$ ; Figure 1). Comparing the mean proportion of women between each successive level of academic standing shows a significant drop in the proportion of females that are seen at the introductory level and the proportion of females that are seen among philosophy majors (independent samples t-test,  $t(78)=5.27$ ,  $p<.001$ ; Figure 2a). However, these data do not indicate a significant drop between the proportion of philosophy majors who are female and the proportion of philosophy graduate students who are female ( $t(77)=2.37$ ,  $p=.12$ ; Figure 2b).

Likewise, the difference between the proportion of graduate students who are female and the proportion of philosophy faculty who are female is not significant ( $t(85)=-.45$ ,  $p=1.0$ ; Figure 2c).

[Insert Figure 2 about here.]

Finally, the data indicate a significant positive correlation between the proportion of philosophy majors who are female, and the proportion of philosophy faculty who are female.

This was the only significant correlation found ( $r=.45$ ,  $p=.012$ ; Figure 3).<sup>2</sup>

[Insert Figure 3 about here.]

## Discussion

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<sup>2</sup> Due to the exploratory nature of this study, we performed an exhaustive search for correlations and mean differences between groups. Therefore, in order to correct for inflation in the false positive rate due to multiple comparisons, we calculated Bonferroni corrected p-values for each test, and report these above.

Our results indicate that there is an overall decline in the percentage of females in philosophy as one travels up the academic hierarchy.<sup>3</sup> In an attempt to provide an empirical basis for understanding the relative lack of women in philosophy, these data offer two interesting insights. First, the data suggest that a major contribution to the gender gap in professional philosophy is the significant drop in the percentage of women that occurs between the introductory and major levels. This suggests that theoretical causal explanations for the underrepresentation of women in philosophy might focus initially on this drop. While we would certainly expect to see fewer women (and men!) become philosophy majors than enroll in introductory courses in philosophy, there is no clear reason to expect this dramatic decrease in the proportion of females in philosophy between the two levels.<sup>4</sup>

Second, the data indicate that the proportion of females at the level of philosophy major holds more or less steady through the graduate and faculty populations. This suggests that, after the initial drop from the introductory level to the major level, women tend to stay in philosophy at the same rate as their male counterparts. There is a trend toward a significant decline in the proportion of women in philosophy as we go from philosophy majors to graduate students. However, even if this decline is real, the magnitude of the decline would appear to be dwarfed by the decline that we see from introductory students to majors.

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<sup>3</sup> We collected and analyzed data on the percentage of women within the ranks of professional philosophy as well. Means and standard deviations for the percentage of women at each faculty level are as follows: Full 19% (22%), Associate 23% (29%), Assistant 43% (35%), Adjunct 19% (36%). For departments that provided gender breakdowns across faculty levels (Full, Assistant, Associate, Adjunct), the percentage of women at the Assistant level was significantly greater than all other faculty levels, viz., Full ( $t(88)=3.87$ ,  $p<.001$ ), Associate ( $t(88)=2.94$ ,  $p=.006$ ), and Adjunct ( $t(88)=3.21$ ,  $p=.003$ ). There were no other significant differences among faculty levels (all  $p>.3$ ).

<sup>4</sup> According to the U.S. Department of Education National Center for Education Statistics (2011) [11], the average enrollment rate for women in degree-granting institutions is 57%. The percentage of women in introductory philosophy courses is particularly low in comparison – a fact we consider worth further exploration.

Finally, our data indicate that there is a positive correlation between the percentage of female philosophy majors at a particular institution, and the percentage of female faculty members found there. This may be due to common causes that drive the increase in both the number of females that become philosophy majors and the number of females that are hired as faculty, respectively. However, since any such common cause would plausibly also increase the proportion of females that become philosophy graduate students, we would expect to see similar correlations with this population as we see with the major and faculty population. Since this is not the case, we have reason to suspect a direct causal relationship between the proportion of female faculty and undergraduates at a given institution.

The idea of exposing female philosophy undergraduates to female role models and mentors is not new. For example, Margaret Walker writes that “the presence of concerns, texts, and images that acknowledge women within undergraduate classrooms, graduate training, and professional media allow women students to feel that a discipline, literally, comprehends them, that it is a space that they are free to enter and expected to enter[8].” Our data are consistent with this hypothesis about how more women professors might lead to more women majors. However, they are also consistent with a much simpler hypothesis: viz., that the mere physical presence of women faculty in philosophy classrooms yields a quantifiable result in the percentage of women entering philosophy at the undergraduate level, independently of course content. Future research should focus on the relative importance of these two candidate explanations in accounting for differences in percentage of women majors in philosophy.

Finally, we recognize the possibility that the institutions most likely to respond to our requests for data were institutions sensitive to the issues of women in philosophy and academia. We have no way to know if our data are biased in this way, but we offer the following response

to the possibility. We think it is reasonable to assume that the departments that are most sensitive to the under-representation of women do not have fewer women than other departments, on average. Indeed, such departments are more likely to be places in which gender awareness positively influences recruiting and retention of women philosophy students and faculty. Consequently, if our respondents did tend to be from departments with greater awareness of gender issues, we would expect the data we report here to be a best-case scenario for women in the field. This could serve to further motivate efforts aimed at empirically understanding the gender gap in philosophy.

## Conclusion

There is an under-representation of women in philosophy, to an extent that, at present, surpasses all other humanities disciplines.[9] The purpose of this study was to garner empirical evidence that would allow for a better understanding of the gender breakdown in philosophy. In quantifying the gender gaps at various levels within academia, we are now in a better position to work toward solutions to narrow these gaps in the future.

The results of this study suggest that a major contribution to the under-representation of women in professional philosophy occurs at the undergraduate level. A significant drop in the proportion of women in philosophy occurs between the time of taking an introductory class in philosophy and declaring a major in the field. Furthermore, there are no other statistically significant drops in the proportion of women as we continue through the academic hierarchy. Finally, this study provides evidence to support the claim that the more female faculty undergraduates are exposed to, the higher the proportion of women one will find among philosophy majors. This indicates that, in the effort to increase the proportion of women in

philosophy, one possible solution could be to increase the exposure that introductory philosophy students have to female philosophy faculty[10]. Further research is needed to ascertain other ways this might be accomplished.

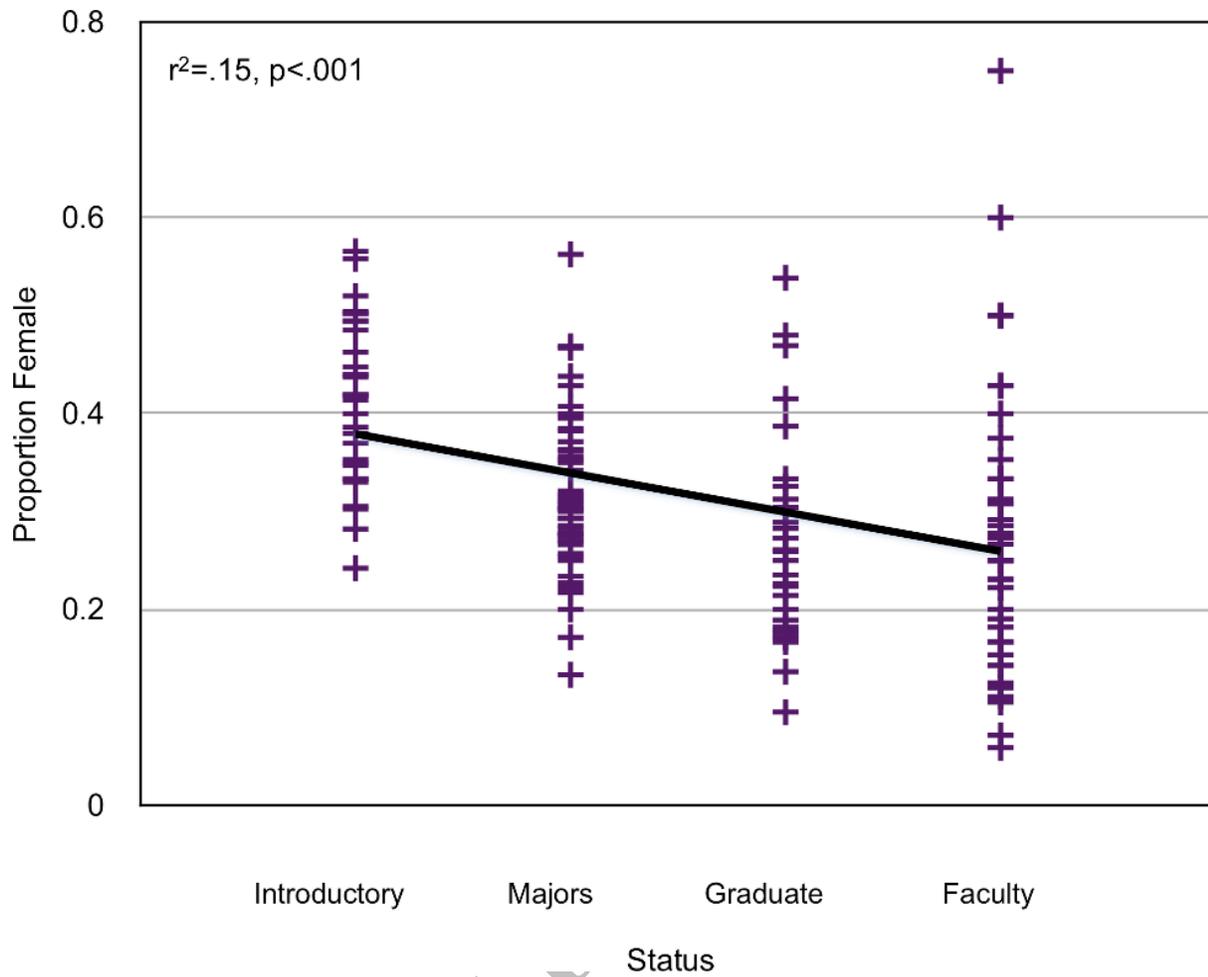
The focus of this study has been women in philosophy. There is, of course, underrepresentation of other groups in philosophy. We do not know if the pattern of minority representation in philosophy is similar to the pattern for women – it would certainly be beneficial to know and to be able to compare the two cases. We hope that one function of this study is to bring attention to the importance of discovering exactly where changes in representation occur and what factors mitigate these changes. These discoveries may direct our attention to facets of the problem that have not historically been the main focus. As is the case with many equal access issues, understanding the problem is the first step to a solution.<sup>5</sup>

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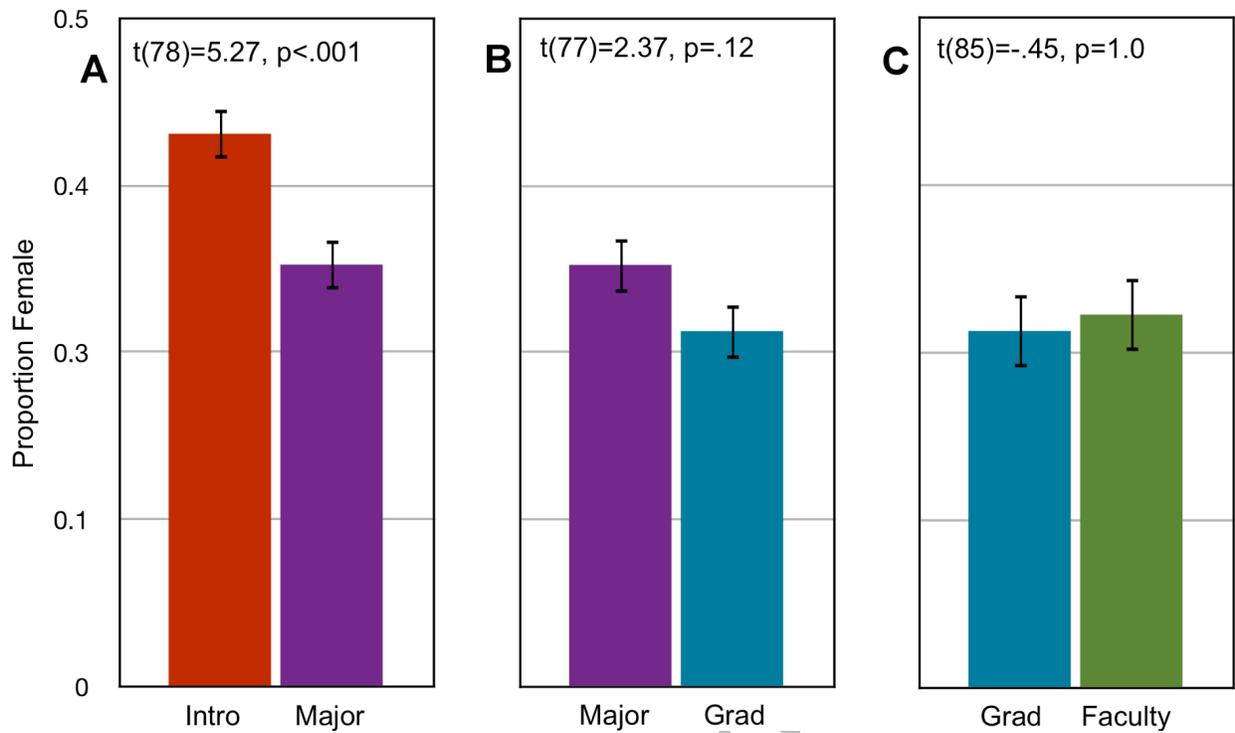
<sup>5</sup> We would like to thank the American Philosophical Association for the grant that funded work on this project. Thanks are also due to Walter Sinnott-Armstrong for encouraging us to apply for this grant and to the Society for Philosophy and Psychology, which administered the grant and supported the project. Finally, we would like to thank Katherine Appleton, Simine Vazire, J.D. Walker and Joseph Paxton for comments and statistical expertise.

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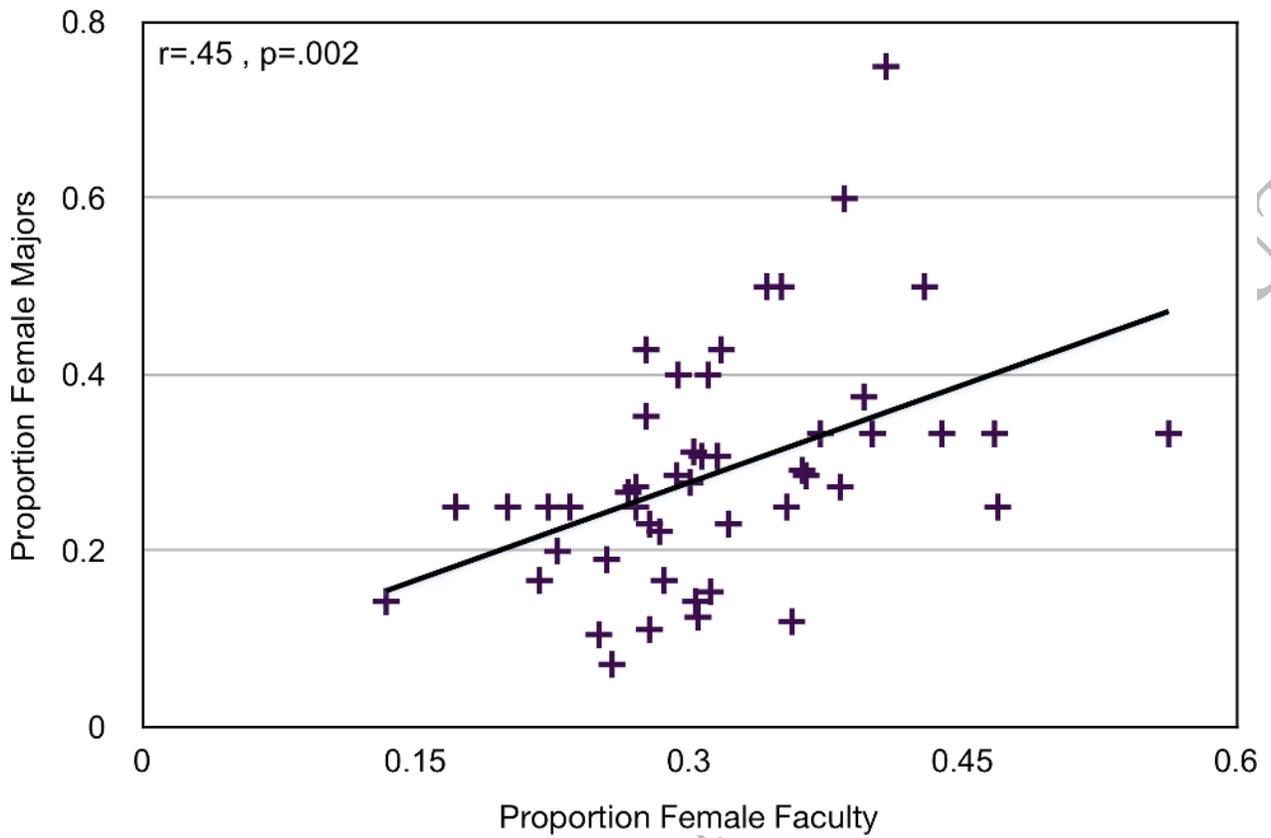
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**Figure 1. Proportion Females in Philosophy by Status in the Academy.** This simple linear regression provides evidence to suggest that the proportion of women in philosophy decreases with respect to the increase in status level within the academy.



**Figure 2. Comparison of Means Across Status in the Academy.** The first graph (A) is evidence of a significant decline in the proportion of women, as one looks from the population of introductory philosophy courses to the population of philosophy majors. The proportion of women found at the major, graduate, and faculty levels (B and C) indicate no such further drop. In all graphs, error bars represent standard error of the mean.



**Figure 3. Correlation between Female Philosophy Majors and Faculty.** The data indicate a significant positive correlation between the proportion of philosophy majors who are female and the proportion of philosophy faculty who are female.