

# **Experimental Philosophy and the Underrepresentation of Women**

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Penultimate Draft

## **Introduction.**

This paper summarizes recent and ongoing experimental work regarding the reality, nature, effects, and causes of the underrepresentation of women in academic philosophy. We first present empirical data on several aspects of underrepresentation, and then consider various reasons why this gender imbalance is problematic. We then turn to the published and preliminary results of empirical work aimed at identifying factors that might explain it. At this stage, main hypotheses (which may overlap in some respects) include the possibility that women's philosophical intuitions are not endorsed by their professors; that a number of general factors associated with discriminatory behavior, such as implicit bias and clashing gender schemas, interact to create a selection effect in which women are more likely to leave, or not even enter, the field; and that women are more sensitive to the perceived irrelevance of philosophy to their job prospects. We also indicate fruitful avenues for future research and suggest how such studies can contribute to understanding underrepresentation across disciplines and underrepresented groups, and to understanding the relevance of the humanities to society as a whole.

## **Section 1: Underrepresentation Data**

Recent empirical data on philosophy in the United States provides evidence of the underrepresentation of women in academic philosophy with respect to jobs, publications, and classroom visibility.<sup>ii</sup> Overall, women earn far fewer philosophy Ph.Ds than they do in many other disciplines, hold fewer and less prestigious jobs in philosophy, are rarely published or cited

in top philosophy journals, and are largely left out of popular anthologies and introductory-level syllabi. From a professional point of view, they almost don't exist even when they do.

The number of women earning philosophy Ph.D.s in the United States is about 30%, which is similar to the proportion of women in STEM (science, technology, engineering and mathematics) fields, far less than that in biology, social and psychological sciences, and other humanities, and well below the average for all disciplines (Healy 2011). Women comprise 16.6% of all full-time philosophy faculty and 26% of part-time philosophy instructors, for an average representation overall of 20.7% (Norlock 2011). Relative to the tenure benchmark, they comprise 17.1% of tenured faculty, 12.5% of tenure-track faculty, and 23.9% of non-tenure-track faculty (Zach 2011).<sup>iii</sup> This drop as one moves from one stage in a professional progression to the next (e.g., 30% Ph.D's to 16.6% faculty) is called a "leaky pipeline"; the term was initially used to characterize the lack of women in STEM (Science, Technology, Engineering, and Mathematics) disciplines.

Within the top 20 U.S. philosophy departments as ranked in the Philosophical Gourmet Report (a widely-cited resource generated by professionals in the field), women comprise 19% of tenured faculty, 21% of full-time faculty, and 20% of all faculty, ranging from 14% of all faculty at NYU (#1) to 33% of all faculty at Yale (#8) and Columbia (#13).<sup>iv</sup> A recent study also provides some evidence for the common belief that women in philosophy tend to cluster in particular specializations: in an analysis of gender participation in the APA Pacific Division conferences in 2012 and 2013, Paxton (2013) found fewer women conference participants than might be expected in philosophy of mind, American philosophy, and metaphysics, and more than might be expected in 17<sup>th</sup> and 19<sup>th</sup> century philosophy, ethics, political philosophy, feminist philosophy, and aesthetics.<sup>v</sup>

Paxton, Figdor, and Tiberius (2012) revealed the structure of the leaky pipeline in academic philosophy in the U.S. by measuring the representation of women at four stages: enrollment in an introductory philosophy course, philosophy majors, graduate students, and university faculty.<sup>vi</sup> The results showed a statistically significant drop between the number of women taking introductory courses in philosophy and those choosing a philosophy major; the differences between the major/graduate and graduate/faculty levels were not statistically significant. The analysis also showed a significant positive correlation between the proportion of female majors and the proportion of female faculty ( $r = .45$ ,  $p = .012$ ). This was the only significant correlation found.

Within the profession, the work of women is also less likely to appear in influential venues or be cited. In a survey of the content of 7 top philosophy journals from 2002-2007, 12.4% of all authors were women (Haslanger op.cit.), ranging from a low of 6% (*Mind*) to a high of 19% (*Ethics*). Among the same 7 journals, 6 had male editors in 2007 and the other had a collection of editors composed primarily of men. Among associate and advisory editors, 17% were women.<sup>vii</sup> At the Stanford Encyclopedia of Philosophy, a major online resource for the profession, 18.7% of article authors (307 of 1641) are women and 23.3% of the encyclopedia's Editorial Board (30 of 129) are women (E. Zalta, Principal Editor, personal communication<sup>viii</sup>). Finally, an analysis of 34,000 citations in 2,200 articles published in four of the profession's leading general journals – *Nous*, *Journal of Philosophy*, *Philosophical Review* and *Mind* – between 1993 and 2013 showed that articles by women comprised 3.6% of the total (19 items cited, by 15 different women authors); by comparison, citations of articles by David Lewis alone comprised 6.3% of all authors cited (Healy 2013).

Women also have scant representation in the classroom as authors of primary readings

assigned or made available to students. An informal analysis of 20 introductory philosophy anthologies published between 2000-2011 found that overall 6% of the primary-source articles or excerpts (i.e., excluding section introductions) were by women; of these, 44% were articles on feminism, sexism, abortion and other gender-coded issues, and 6.9% were by Ayn Rand alone (Thompson et al., unpub.).<sup>ix</sup> Representation of women authors ranged from 0% (*Core Questions in Philosophy: A text with readings*, 5<sup>th</sup> ed., E. Sober, ed. (2008; 19 articles, 0 by women) to 16.4% (*New and Old World Philosophy: introductory readings*, V. Luizzi and A. McKinney, eds. (2000; 134 total, 22 by women). While the texts differ in focus and style (e.g., *Core Questions* integrates into the text selections from major historical figures of Western philosophy, such as Plato and Bertrand Russell), their sample included such standard broad-survey anthologies as *Reason and Responsibility: Readings in some basic problems in philosophy* 11<sup>th</sup> ed., J. Feinberg and R. Schaffer-Landau, eds. (2001; 3 of 70 articles (4.47%) by women, 2 of them on gender-coded issues) and *Introduction to Philosophy: Classical and Contemporary Readings*, 5<sup>th</sup> ed., J. Perry, M. Bratman, and J. M. Fischer, eds. (2010; 4 of 70 articles (5.71%), 2 on gender-coded issues). A count from later editions of these two anthologies (by one author of this review, C. Figdor, using the same methodology) obtained similar results: in *Reason and Responsibility*, 15<sup>th</sup> ed. (2013), 5 of 86 primary readings listed in the publishers' online table of contents were by women, 3 of the 5 in gender-coded issues; in *Introduction to Philosophy: Classical and Contemporary Readings*, 6<sup>th</sup> ed., (2012), 5 of 70 articles (excluding a section on puzzles and paradoxes) were by women, 1 gender-coded and 2 by the same author. An online discussion of textbooks at the Feminist Philosophers blog <http://feministphilosophers.wordpress.com/?s=textbooks> revealed a similar pattern in some non-introductory anthologies, including *Metaphysics: A Guide and Anthology* (2004; T. Crane and K.

Farkas, eds.), 0 works by women out of 54 articles; *Arguing about Knowledge* (2009; R. Neta and D. Pritchard, eds.), 1 of 44; and *Philosophy of Mind: Classical and Contemporary Readings* (2002; D. Chalmers, ed.), 2 of 63. While these numbers are impressive, they remain anecdotal; a formal analysis of anthology content that eliminates concerns of possible sampling bias remains to be done.

Finally, in an analysis of 57 introductory-level course syllabi from 22 of the top 40 small liberal arts colleges (as ranked by U.S. News and World Report), Mastro (2010) found that 8% of the authors on the syllabi (60 of 739) were women, and 31 of the total 57 courses had no women authors at all (courses averaged 13 authors per syllabus). Among the 46 non-ethics courses, 6% of the authors (36 of 602) were women, and 24 of the 46 had no women authors at all.<sup>x</sup>

## **Section 2: Why study underrepresentation of women in philosophy?**

The experimental philosophy studies described above were motivated by anecdotal evidence of underrepresentation of women in academic philosophy coupled with the sense that we ought to ameliorate and avoid this underrepresentation. Here we identify four negative consequences of the imbalance that support the normative claim: (1) an educational disadvantage that can adversely impact the career success of women outside of academia and philosophy; (2) the epistemic sub-optimality of a non-diverse field; (3) a greater risk of legal liabilities associated with sex-based discrimination and sexual harassment; and (4) injustice. All four issues – which need not exhaust all possible motivations -- suggest testable hypotheses that may be pursued in future experimental philosophical and social psychological research.

(1) One goal of philosophical training is to provide students with skills in critical thinking, logical analysis, organized writing, consideration of complex issues, generation of new

ideas, and thinking deeply about one's goals, relationships, and society.<sup>xi</sup> Insofar as philosophical training provides these skills, hones pre-existing student capabilities or dispositions, or provides a credential that employers take to be evidence of the presence of these skills, it imparts great value to students. These cognitive and socially critical skills are prized across a wide range of careers in business, technology, law, journalism, politics, medicine, and other non-academic jobs. To the extent that, in disproportionate numbers, undergraduate women choose not to take philosophy courses beyond the introductory level, they may not be getting the same value for their educational dollar as male students and risk missing out on career opportunities and benefits that these skills provide. There is an open debate over the extent to which philosophy provides certain skills (e.g., critical thinking skills) or instead whether students who possess these skills tend to become philosophy majors (Livengood et al. 2010). However, it would remain true even on the second view that a philosophy degree is a reliable indicator of these skills, and that women who possess these skills but do not have a philosophy credential may be less likely to be perceived as having the skills. This hypothesis could be tested with a variant on the male/female CV studies: female CVs might be manipulated with a philosophy credential variable (a major, a master's degree, a Ph.D.) and participants might be asked to rate these "job candidates" on their possession of skills associated with philosophy.

(2) Underrepresentation can undermine research quality in the academic philosophical community and its contributions to other academic and non-academic communities. It can deprive philosophy of high quality work that women leaving the profession might otherwise have contributed (Beebe and Saul 2011). Longino (2002) argues more generally that a less diverse community of knowledge producers hampers the production of knowledge by restricting criticism and the challenging of ideas from multiple perspectives. Friedman (2013) argues that

these multiple perspectives include feminist perspectives (which are not identical to perspectives of women). But gender diversity advances a diversity of theoretical perspectives only if there is uptake of dissenting ideas – that is, people in power pay attention to the ideas and are open to persuasion – and only if those offering these ideas are granted intellectual authority.<sup>xii</sup> Empirical work on implicit bias and stereotype threat shows that underrepresented groups face multiple barriers to uptake and authority, as measured by conventional indicators of academic success (Bradley 1984, 1993; Jost et al. 2009; Saul 2012, 2013). For example, journals that do not practice double-anonymous refereeing show biases in favor of people who occupy higher places in the academic hierarchy (Peters and Ceci 1982; Lee and Schunn 2010), where women in philosophy are especially underrepresented. Critical elements in the job-placement process also indicate a bias against women: women are less likely to be praised in letters of recommendation to the same high degree as men (Trix and Psenka 2003) and their curricula vitae are discounted even when the CVs are identical to those of men (Moss-Racusin et al. 2012; Steinpres et al. 1999). Stereotype threat – the internalization and confirmation of tacit stereotypes by members of a marginalized group (Steele and Aronson 1995; Neuvillette and Croizet 2007) – increases the likelihood of underperformance by members of the group when they are reminded of their marginal status. This can result in a vicious cycle in which an initial lack or discounting of epistemic authority is reinforced by stereotype-threat-induced underperformance.

(3) Underrepresentation may exacerbate problems involving sexual harassment and discrimination and contribute to a poor working climate, especially for women. Psychological studies provide a complex picture of the relationship between underrepresentation and sex-based harassment. For example, O’Hare and O’Donohue (1998) identified lack of knowledge of grievance procedures and formal policy on sexual harassment, and lack of professionalism in the

work environment as key risk factors for sex-based harassment, not gender-skewed ratios. Kabat-Farr and Cortina (2014) divided sex-based harassment into sexual-advance harassment (involving unwanted sexual advances) and gender harassment (involving verbal and non-verbal conveying of rejection, denigration or hostility) and found that underrepresentation of women in a workgroup contributed to gender harassment but not sexual-advance harassment.<sup>xiii</sup> Insofar as the empirical literature suggests ways to improve the numbers of and climate for women in academic philosophy, such findings may help universities reduce legal and financial risks due to harassment and discrimination (Haslanger 2011). Actions that aim to reduce these risks are also apt to improve working conditions in general, not just for women in or aiming to enter the philosophy profession (Saul 2014).

(4) Given that discrimination and unfairness are injustices, there is a simple moral motivation for removing structural and other forms of discrimination and unfair treatment if these are contributing factors to the underrepresentation of women. This is not the place to debate whether the issue of injustice should be accorded more weight than the practical reasons already mentioned. It is at least the case that moral reasons should factor into determining steps taken to eliminate underrepresentation if unfair treatment is among its causes.

### **Section 3 – Potential Causes of Underrepresentation**

While empirical work on the underrepresentation of women remains new, it has begun to supplement, if not displace, *a priori* speculation in online venues, conference halls, and faculty offices. Efforts are now underway to formulate and test hypotheses about the likely causes based on arguments by feminist philosophers, gender differences in results of independent studies, and other sources. Among the many proposed, and to date largely untested, hypotheses are the



following: that women are turned off by the combative nature of philosophical debate, that women have less innate ability for philosophy, that philosophy is associated with maleness or perceived as a mathematics-heavy discipline, that women face widespread explicit or implicit bias, and that women are quicker to conclude that they lack philosophical ability.

Many of the feminist arguments revolve around the idea that the climate in philosophy disproportionately discourages women. Following Moulton (1989), some feminist philosophers have argued that the climate in philosophy promotes implicit biases and stereotype threat and advances masculine social norms that oppress women, including those associated with the adversarial nature of philosophical argument. Rooney (2010) cites in particular the metaphors of war and other forms of combat that are often used to describe argument practices. Beebee (2013) argues that a masculine man is considered the typical philosopher and masculine norms guide paradigmatic philosophical style and method; since women and non-masculine men are deviants from this standard, they are likely to experience stereotype threat. These arguments could be tested in empirical studies of the schemas about philosophy, including what typical philosophers are like, that students carry into their first philosophy course.

The first experimental study of possible causes of underrepresentation is Buckwalter and Stich (2014).<sup>xiv</sup> They proposed and tested the different intuitions hypothesis: undergraduate women are disproportionately alienated when their intuitions in response to many canonical thought experiments in philosophy do not align with the intuitions taught by their (primarily male) professors as the “obviously correct” ones – that is, the intuitions that are sanctioned within the philosophical community as being true. This divergence may induce a selection effect that filters out more women than men, in part because women are more likely to view

intelligence as a fixed trait and men more likely to view it as malleable (Buckwalter and Stich op.cit. 33; Dweck 1986, Dweck and Leggett 1988).

The different intuitions hypothesis was suggested by gender differences found in Starmans and Friedman's (2009) study of intuitions in epistemology. In their study, undergraduate participants at the University of Waterloo in Canada (N = 140; 84 men, 56 women) read vignettes styled after Gettier (1963), in which someone is ascribed a true belief but does not seem to have the belief for a good reason. The philosophically relevant question is whether this person also has knowledge (the "obviously correct" answer is no – that is, in these cases intuition should yield the judgment that the person lacks knowledge). In one of their study's vignettes, a man puts his watch on a table and goes to take a shower. While he is in the shower, a burglar silently sneaks in, replaces the watch with a cheap plastic imitation watch, and sneaks out with the original watch. Participants are then asked: does the man know that there is a watch on the table, or does he merely believe it? They found that 41% of men said that the man knows a watch is on the table, compared to 71% of women ( $p < .05$ , Fisher's exact test).

Buckwalter and Stich conducted their own studies and reanalyzed (or asked other researchers to reanalyze) results from other experimental philosophy studies on intuitions to see if they could also find any gender differences.<sup>xv</sup> They found that male and female responses diverged across a wide number of standard thought experiments, not just Gettier cases. For example, on a variation of Frank Jackson's (1986) thought experiment about Mary the neuroscientist, Holtzman (2013) asked participants if a man who knows all the science there is to know can know what apples taste like without every having tasted one. (Jackson's "obviously correct" answer is no.) Of male participants, 39% said yes, while only 17% of women participants said yes ( $p < .005$ , Fisher's exact test).

However, the different intuitions hypothesis has had mixed support from this research. For example, as Holzman's result shows, sometimes women's intuitions coincide with the "obviously correct" answer better than men's (see also Antony 2012 for this criticism). In addition, gender differences are not systematic (Antony op.cit.). Starman and Friedman (op.cit.) found no gender differences when the stolen item was a book rather than a watch, and in a follow-up study were unable to replicate a difference. Finally, Adleberg, Thompson and Nahmias (2014) conducted replication studies of 14 thought experiments examined in Buckwalter and Stich and were unable to replicate statistically significant gender differences in any of them.<sup>xvi</sup> For example, in the watch scenario, they found that 57% of women and 44% of men judged that the man "knows" that the watch is on the table, but this difference was not statistically significant. They also conducted a literature review of prior experimental philosophy results for gender differences but were unable to discern how often researchers might have looked for such differences. Without knowing whether gender differences were looked for and not found (and then reported as not found), it is impossible to know if the gender differences that *are* reported are a representative sample. They also caution (op.cit.: 16) that their study did not have enough power to detect small or medium (but statistically significant) gender differences, but argue that differences of these sizes are unlikely to account for the underrepresentation of women in philosophy. However, it may be that even very small effects of a number of different factors might translate into a large effect on behavior.

This possibility is raised by Antony (op.cit.), who proposed the perfect storm hypothesis: gender norms, implicit bias, stereotype threat, and other factors that are associated with discrimination but are not specific to philosophy nevertheless tend to converge and intensify in academic philosophy, leading to underrepresentation. (Calhoun 2009 suggests the more specific

hypothesis of clashing schemas for “woman” and “philosopher”. Valian 1999 introduces the idea of gender schemas: sets of unconscious beliefs that constrain our perceptions of others and guide social interactions.) For example, the stereotype of men being good at formal reasoning may interact with implicit biases that are revealed in a man’s failure to understand a point a woman is making in a philosophical conversation and the woman’s coming to doubt her own philosophical abilities. Similarly, when philosophers go drinking in the evening at a conference, the maleness encoded in both drinking culture and philosophy culture can make philosophy an uncomfortable place for women (and men who are counter-stereotypical). Women may also find themselves in a bind between a professional norm of combativeness and a female norm of not being aggressive. The Perfect Storm hypothesis gains indirect support to the extent that studies seeking particular factors do not converge on one or very few, but rather provide evidence for a diverse range of causes.

Most recently, Thompson et al. (op.cit.) have suggested a perceived unfairness hypothesis: women are more likely to judge that the lack of women on syllabi is unfair, and this perception of unfairness is a predictor of intent to continue studying philosophy. They surveyed introductory-class students at Georgia State University in fall 2012 (n = 724, 385 women, 323 men, 3 other, 13 no response) and fall 2013 (n = 816, 412 women, 362 men, 42 no response) regarding the general climate of the course. They found no reports of explicit bias and that all students disagreed with the statements “I felt that the philosophy classroom was too combative” and “I am uncomfortable with the confrontational nature of some philosophical discussions”. For the second statement, the 2013 mean for women was 3.54 and for men 3.70, ( $p = .049$ , although these results are preliminary). However, even if this gender difference is not statistically significant after adjusting for multiple comparisons, the finding suggests that the hypothesis that

women are disproportionately turned off by the argumentative style in philosophy is unlikely to be a significant factor accounting for their underrepresentation.

In addition, in 2013 Thompson et al. (op.cit.) had all graduate student instructors include at least 20% women authors on their Introduction to Philosophy course syllabi; in 2012, prior to this requirement, syllabi included 10% women authors on average. They found in their 2012 and 2013 surveys that a perception of fairness of the syllabus gender ratio was a partial mediator between gender and an expressed intent to continue in philosophy. In 2012, all students agreed that the syllabi were not fair with respect to the gender ratio, but women agreed more strongly that the syllabi were not fair (the mean for women was 3.77, that of men 3.43,  $p < .001$ ); their 2013 survey yielded the same result (the mean for women was 3.48, for men 2.99,  $p < .001$ ). In addition, the number of women on the syllabus predicted students' perception of syllabus fairness (Beta = 0.303,  $t(1528) = 2.41$ ,  $p < .001$ ). However, the larger proportion of women on the syllabus in 2013 did not correlate with an increased intent among women to pursue philosophy. These results suggest several testable hypotheses. For example, perhaps a 20/80 ratio of women/men authors is not sufficient to encourage women to pursue philosophy; perhaps increasing the proportion of women authors on syllabi alone, or designing more inclusive syllabi in general, is not sufficient; or perhaps increasing the proportion of women authors is unrelated to women's willingness to continue in philosophy.<sup>xvii</sup>

In addition, a new hypothesis was suggested by their data: in both 2012 and 2013 surveys, women were less likely than men to agree that "The topics philosophers discuss are relevant to my life", and in the 2012 survey, while all students disagreed that philosophy was useful for getting a job, women were more likely to disagree than men.<sup>xviii</sup> They hypothesize that women may be more concerned about the practical benefits and relevance of philosophy, and

that this concern leads them to undervalue what philosophy has to offer and to not pursue it further. This suggests that a new study might look at whether women are more likely to major in philosophy if their introduction to the field is through courses that directly link non-academic contemporary issues to philosophical problems or that draws connections between philosophy and other academic fields.

A final suggestion, defended by Calhoun (unpub.) and Dougherty, Baron, and Miller (unpub.), is the pre-university-influences hypothesis. This hypothesis was suggested by data collected between 1971-2002 by Colby College from entering students, which showed that women comprised 29% of the 105 entering-student respondents declaring an intent to major in philosophy (of a total of 11,394 respondents, of which 52% were female and 48% male); in that period, 28.6% of philosophy majors were female.<sup>xix</sup> On this view, as articulated by Calhoun, women don't major in philosophy in representative numbers because they have greater difficulty seeing how a philosophy major provides them with the skills needed for the jobs they are most likely to occupy in a workforce that is structured by gender. If most women work in health-related fields, primary- and secondary-school education, and social services, then a major that is promoted as honing skills framed in ways relevant to managerial, administrative, and policy-making jobs is unlikely to be perceived as relevant to the jobs many women can expect to have. Calhoun suggests instead that women might be more interested in philosophy if the same skills are described in terms of "clearly communicating" or "appreciating others' perspectives" – descriptions that emphasize the interpersonal contexts in which critical thinking skills are most likely to be applied by working women.

## **Conclusion.**

Why are there relatively few women in philosophy? Experimental work on this question has begun to test the various hypotheses proposed to account for underrepresentation and to suggest new hypotheses. We have suggested a number of points at which further studies are likely to yield interesting results for understanding the structure of the imbalance, the ways in which it is manifested and perpetuated, and the factors that contribute to it. While the fact of underrepresentation is now firmly established, there is insufficient evidence to draw any conclusions about its causes. Perhaps only the hypotheses that women find philosophy too math-oriented or too technical can be set aside, given that more women obtain Ph.Ds in mathematics and linguistics than in philosophy. It is still time to generate as well as test hypotheses. For example, the findings of Thompson et al. prompt the hypothesis that women may be more likely to associate being good in philosophy with innate talent, along the lines of Bian, Cimpian, and Leslie's (2013) Field-specific Ability Beliefs hypothesis. Research along these lines might illuminate a relationship between an individual's beliefs about her own abilities (Dweck op.cit., Dweck and Leggett op.cit.) and a generic belief (among men and women) about what it takes to succeed in a particular academic field. It would also contribute to our understanding of how philosophy is perceived by introductory-level students, other academics, administrators, and the public. Follow-up studies could compare how women who choose to remain in academic philosophy perceive the field and their own abilities with the corresponding perceptions of those who do not pursue more advanced philosophy courses, degrees, or careers. This research would be in addition to formally rigorous scrutiny over time of factors correlated with career success and advancement (such as publication in top journals or inclusion in an anthology). Such work is needed to substantiate (or disprove) patterns of applying professional norms that currently appear to negatively impact women disproportionately. Empirical research into work-life balance issues

(Mason, Wolfinger, and Goulden 2013; Emslie and Hunt 2009) as they may impact the presence of women in academic philosophy at various career stages is another area of research that remains to be pursued.<sup>xx</sup>

Finally, the issue of gender underrepresentation in academic philosophy occurs within a context in which the value of the humanities in general is being questioned and in which there is underrepresentation of other groups (e.g., people of color) in academia in general. The perceived and actual gaps between the structures and values of the academic world and the wider world is not limited to gender ratios or academic philosophy. A growing empirical literature on philosophy's perceived value and its underrepresentation problems can help illuminate the relevance issue for any humanities discipline and the factors causing various kinds of underrepresentation in them. Empirical work on the perceived relevance of fields to careers or other life choices, in philosophy and other disciplines, and regarding women or other underrepresented groups, would contribute to understanding these broader issues – as would comparative work regarding fields where women are in the majority or are proportionately represented. Efforts to increase the proportion and career success of women in STEM disciplines notably by the U.S. National Science Foundation (<http://www.nsf.gov/crssprgm/advance/>), as well as related research into the barriers to women entering STEM fields and why some women persist in these fields, may also help guide this research.

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<sup>ii</sup> We focus on U.S. data because it is the most complete, while taking note of related research from the U.K. and Australia where it is available. To date this literature does not break down the category "women" into salient intersecting subcategories that are also underrepresented, such as race, sexual orientation, transgender identity, or disability. For example, it is estimated that there are fewer than 30 black women with philosophy Ph.D.s who are working in philosophy departments in North America (Dotson 2012; Gines 2011). Severe underrepresentation can lead to fears that one's performance will be taken to represent the philosophical abilities of anyone in that category (Magloire 2014).

<sup>iii</sup> Healy's analysis is based on the 2009 Survey of Earned Doctorates, conducted annually by NORC at the University of Chicago. Norlock's and Zach's analyses are based on the 2009 report of the (U.S.) National Center for Education Statistics (NCES), based on data collected in 2003. The American Academy of Arts and Sciences is currently collecting more recent data for its humanities indicators (<http://www.humanitiesindicators.org/resources/survey.aspx>) that will include philosophy. Zach notes that because the NCES sample size is small (350 philosophy faculty survey respondents out of 23,000 full- and part-time philosophy faculty in the U.S.), the margin of error for these results is large: we can reliably conclude only that the percentage of

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women among tenured philosophy faculty is somewhere between 8.5% and 25.6%. A list of women in tenure or tenure-track positions in U.S. doctoral granting institutions, compiled (and frequently updated) by Carla Fehr, is at [http://www.csulb.edu/%7ejvancamp/doctoral\\_2004.html](http://www.csulb.edu/%7ejvancamp/doctoral_2004.html). Data from the British Philosophical Association shows that women make up 24% percent of permanent staff in UK philosophy departments (Beebee and Saul 2011).

<sup>iv</sup> Rankings are compiled and published at <http://www.philosophicalgourmet.com/>; these statistics were reported by Haslanger 2011 based on the 2009 Philosophical Gourmet Report; see also Buckwalter and Stich 2014. PGR rankings are not uniformly embraced within the profession despite their dominant role; Saul (2012) argues that these rankings and the REF (Research Excellence Framework rankings in the U.K. are affected by various forms of implicit bias.

<sup>v</sup> Expected numbers were relative to data-derived base rates of 67% male and 32% female participants, based on her sample of 938 participants, of whom 634 self-reported as male, 300 as female, and 4 as other. The Gendered Conference Campaign, started at the blog Feminist Philosophers (<http://feministphilosophers.wordpress.com/gendered-conference-campaign/>) has also brought attention to all-male line-ups of invited speakers at many philosophy conferences and appears (anecdotally) to have led to an increase in invited women speakers at conferences.

<sup>vi</sup> These results were based on the total numbers of women at each level reported by a total of 56 institutions: 11,246 students in introductory level courses, 3,443 declared majors, 1,359 graduate students, and 711 faculty members. The results cover both Ph.D.-granting institutions and liberal arts colleges, since there were no significant differences between the results for each type of institution taken separately. In a study based on data from the Australian Department of Education, Employment, and Workplace Relations for 2001-2006, Goddard (2008) found that the average of women completing a Bachelor's degree in philosophy in Australian universities during that period was 44% of the total number completing that degree, while the average of women completing a Doctorate by Research in philosophy was 42%. In both categories, women's participation fell over the period, from 52% to 40% for women earning Bachelor's degrees in philosophy and from 46% to 38% for women earning Doctorates by Research in philosophy. The reported data did not include tests of statistical significance.

<sup>vii</sup> In addition, only 2.4% of the articles published in these 7 journals had feminist-philosophy content; five (*Mind*, *Philosophical Review*, *Philosophy and Phenomenological Research*, *Journal of Philosophy*, and *Nous*) published no feminist-philosophy content in the five-year period. The relation between rates of feminist-philosophy publications and rates of publications by women authors in these journals is not straightforward, since many women philosophers do not do feminist philosophy and some men philosophers do feminist philosophy. However, women doing feminist philosophy have spearheaded efforts to raise awareness of and counter gender issues within academic philosophy, including but not limited to the marginalization of feminist philosophy as measured by rates of publication in top general journals. See also Rooney 2011 on the marginalization of feminist epistemology within epistemology.

<sup>viii</sup> The numbers (without disambiguation of non-gendered names) are publicly available at <http://plato.stanford.edu/board.html> and <http://plato.stanford.edu/authors.html>.

<sup>ix</sup> Textbooks were selected by Nahmias and other philosophy faculty at Georgia State based on their perceived popularity as introductory texts. Section introductions, commentaries, and other introductory materials were excluded to avoid counting such entries as equivalent to primary readings in terms of gender representation.

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<sup>x</sup> Philosophy departments in the top 40 schools were contacted by email or phone to ask for introductory-level syllabi; all but four of the syllabi were for courses listed at the ‘100’ level (a standard academic designation for introductory level courses). Courses were designated as ‘ethics’ based on examination of the readings. However, courses titled Introduction to Philosophy, which typically included readings in ethics, were not counted as ethics courses.

<sup>xi</sup>Recent articles in the popular press on the benefits of a philosophy degree include: [http://www.huffingtonpost.com/2014/03/05/why-philosophy-majors-rule\\_n\\_4891404.html](http://www.huffingtonpost.com/2014/03/05/why-philosophy-majors-rule_n_4891404.html) and <http://www.theatlantic.com/technology/archive/2011/10/is-philosophy-the-most-practical-major/246763/>. One recent survey of employers also indicates that employers value the critical and analytical thinking skills characteristic of philosophical training: [http://www.aacu.org/leap/documents/2013\\_EmployerSurvey.pdf](http://www.aacu.org/leap/documents/2013_EmployerSurvey.pdf).

<sup>xii</sup>Fehr (2011) identifies a “free rider” problem: many universities or knowledge communities can gain the epistemic benefits of diversity by free riding on the efforts of a few “diversity workers” to diversify a field. She recommends that communities take steps to train, hire, retain and reward those who do diversity development work, which includes presenting underrepresented theoretical perspectives and nurturing cultures that are conducive to the development of dissenting views.

<sup>xiii</sup>The blog What is it Like to be a Woman in Philosophy? documents both forms of sex-based harassment of women in philosophy (<http://beingawomaninphilosophy.wordpress.com/>).

<sup>xiv</sup>Buckwalter and Stich initially undertook their study prior to empirical confirmation by Paxton et al. (op.cit.) that women were not majoring in philosophy in representative numbers. Also, their study was circulated publicly for a number of years prior to publication, enabling some (e.g. Antony op.cit.) to respond to it in print prior to its actual publication date.

<sup>xv</sup>These included thought experiments from a variety of philosophical areas, e.g. in metaphysics (Holtzman 2013), epistemology (Starmans and Friedman op.cit.; Beebe and Buckwalter 2010), value theory (Zamzow and Nichols 2009; Pizarro, Uhlmann, and Bloom 2003), philosophy of mind (Buckwalter and Stich op.cit.), and philosophy of language (Buckwalter and Stich op.cit.).

<sup>xvi</sup>Adleberg et al. did report a strong trend in the same direction as Buckwalter and Stich’s result for the brain-in-a-vat scenario, but found that this difference between men’s and women’s judgments was not significant when corrected for multiple comparisons using the Sidak correction. Correcting for multiple comparisons is a statistical method that raises the bar for finding a result that counts as statistically significant. The more times researchers compare two groups (e.g., women vs. men on their responses to a question), the more likely it is that a difference will be found just by chance. This will increase the number of false positives unless the level of statistical significance is adjusted in relation to the number of comparisons made.

<sup>xvii</sup>Norlock (2012) reports that inclusive syllabi in the STEM disciplines have been correlated with (1) enhanced engagement of students previously reporting feeling alienated, unwelcome or out of place in class and (2) improvements in critical thinking.

<sup>xviii</sup>For the “relevance” and the “job” statements, means were higher for women than men in both 2012 and 2013. In addition, in 2013 half the students (n = 408) viewed a presentation on the benefits of a philosophy degree, and these students viewed philosophy as more useful for getting a job and were more willing to consider continuing in philosophy, regardless of gender. Readers should consult with the authors directly for further details.

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<sup>xix</sup> Dougherty et al. surveyed students in the first lecture of an introductory philosophy course at the University of Sydney in 2013. They found that while the class as a whole was about 60% women, about 49% of the students who reported intending to major in philosophy were women. Readers should consult with the authors directly for further details.

<sup>xx</sup> It may also be that people who do not have children are overrepresented in philosophy, and that this feature (if real) might also be true of women in philosophy (see discussion at Feminist Philosophers <http://feministphilosophers.wordpress.com/2013/06/10/surprise-babies-can-harm/#comments>.) Anecdotally, the historical record of prominent (male) philosophers tends not to include family men. Whether the field is perceived as family-irrelevant could be included in the perception-of-philosophy research mentioned in the text.