Conscious Efforts to End Unconscious Bias: Why Women Leave Academic Research

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Abstract

Issues surrounding gender discrimination have been addressed over the past 40 years with various pieces of legislation and federal policies that have made such discrimination illegal. The number of women in higher education as students and faculty has steadily increased since the 1950s, though only in certain disciplines and in the lower faculty ranks, especially in many of the STEM disciplines (defined by the National Science Foundation as Biological Sciences; Computer and Information Science and Engineering; Engineering; Geosciences; Mathematics and Physical Sciences; Social, Behavioral and Economic Sciences; and Education and Human Resources). Why is this? This article reviews the literature regarding one possible reason for this exception: unconscious bias or gender schemas. Possible solutions are presented that can help overcome the bias experienced and perceived by female faculty in institutions of higher education in the United States.

Keywords: female faculty, higher education, unconscious bias, gender discrimination

Introduction

> … As profound as the transformation of America's consciousness has been during the past 150 years, hidden assumptions about sex and gender remain embedded in cultural discourses, social institutions, and individual psyches that invisibly and systemically reproduce male power in generation after generation. I call these assumptions the lenses of gender. Not only do these lenses shape how people perceive, conceive, and discuss social reality, but because they are embedded in social institutions, they also shape the more material things - like unequal pay and inadequate day care - that constitute social reality itself. The purpose of this book is to render those lenses visible rather than invisible, to enable us to look *at* the culture's gender lenses rather than through them… (p. 1)
>
> Sandra L Bem (1993). The lenses of gender: Transforming the debate on sexual inequality. New Haven: Yale University Press.

> The education and empowerment of women throughout the world cannot fail to result in a more caring, tolerant, just and peaceful life for all.
>
> Aung San Suu Kyi, Burmese-Myanmarese dissident and politician; Leader of National League for Democracy, Nobel Peace Prize laureate.

Despite many years of work to minimize gender bias in the workplace, women researchers often "disappear" after about a decade in academia. This phenomenon continues to occur despite near parity of applicants, matriculating students and graduates in American medical schools (AAMC, 2008), and (beginning in 2000) nearly equal numbers of men and women earning science and engineering bachelor's degrees (NSF, 2007). This disappearance happens despite the fact that in 2006 women earned almost half (45%) the doctorates in the science and engineering fields (NSF 2009), and nearly the same as men in the natural sciences (Handelsman et al., 2005). This increase has continued since 2006 and is true today (NSF, 2010). The increased number of female students and doctoral recipients directly correlates with the number of women who serve as faculty in institutions of higher education, albeit at certain ranks and at certain types of institutions. Although the number of female assistant professors -- and, in some disciplines, associate professors -- is becoming equal to that of men, women are not attaining full professorships or upper administrative positions as often as men (Touchton, 2008). Why is this happening? This paper will review women's departure from academia and offer ways to re-attract them.

The Problem

Women are Leaving Academic Research

According to a recent report from the National Science Foundation, "growth in the number of female doctorate recipients (6.9%) was greater than growth in male doctorate recipients (6.2%)" (Falkenheim & Fiegener, 2008). Between 1979 and 2005, the percentage of master's degrees earned by women increased from 49% to 59%; during the same time period, the percentage of doctoral degrees awarded rose from 30% to 49% (NCES, 2007). In 2008-09 women for the first time were awarded a greater percentage of doctoral degrees (50.4%) than men (Bell, 2010).

The National Study of Postsecondary Faculty (NCES, 2007) found that in 2004, 57.5% of the faculty and instructional staff were male and 42.5% were female. Males accounted for 13.6% of full professors, 8.6% of associate professors, and 8.1% of assistant professors; figures for females were 4.4%, 4.9%, and 6.6% , respectively (remaining percentages were divided among instructors, lecturers, and those with no rank). According to the National Center for Education Statistics (NCES, 2000), in 1997 16% of female faculty at degree-granting institutions had attained the rank of professor, a number that by 2005 had decreased to 15%. White (2005) examined the status and ranks of women at several research universities and confirmed that the number of female professors had not increased from 2000 to 2005. White observed that "Real progress in creating gender equity in the future will require acknowledging the gendered state of our current workplace" (p. 22). Institutions of higher education today remain gendered institutions, with males holding the majority of professorships and upper administrative positions, such as president and provost.

While more women are attending college and earning terminal degrees, statistics reveal that women are not advancing or continuing in academia at the same rate as men (West & Curtis, 2006; InterAcademy Council, 2006; Xu, 2007). It is important to comprehend how this fact affects universities and what can be done to halt this departure from academia.

Why should a research administrator (RA) be concerned? It is important to understand the issues that faculty in higher education face as researchers and instructors. Pogatshnik (2008) and Robinson (2008) linked the RA's knowledge of faculty needs with the ability to help them attain the goals of successful research programs.

A successful RA is concerned with more than just compliance with the most recent policies from NSF, changes on grants.gov, or modifications to Office of Management and Budget Circular A-21 (Cost Principles for Educational Institutions). Being a good RA means possessing the people skills to work effectively with researchers, administrators, and sponsor staff. In its mission statement, the Society of Research Administrators International (SRA, 2009) cites a dedication "to the education and professional development of research administrators working in varied organizational

settings." SRA's emphasis on human interaction is echoed by the National Council of University Research Administrators (NCURA, 2009), which acknowledges that "Individuals involved in sponsored projects administration are faced with a multitude of challenges: becoming knowledgeable about federal regulations and individual agency requirements, *providing assistance to faculty (authors' emphasis)*, gathering information, administration of awards, and many other tasks."

A major function of the RA is assisting faculty with grant proposal development and securing funding for research. Professional RA organizations such as SRA and NCURA support these efforts by providing the necessary tools. For example, a recent NCURA book review addressed successful grant writing strategies (Gitlin & Lyons, 2008), while SRA routinely provides information about grant-seeking publications (SRA, 2009). Both SRA and NCURA annual meetings feature association and federal representatives instructing RAs in ways to help faculty enhance their careers through the preparation of successful proposals and participation in sponsored activities.

But RAs must also understand the issues faculty face and the obstacles that can stand in their way of applying for funding and conducting research. This paper examines one of these issues: unconscious gender bias. This issue is a concern for all administrators in higher education, from academic affairs to research administration to financial services.

Does Gender Bias Still Exist in the Ivory Tower?

While there has been an increase in the number of women receiving doctorates, there has not been a corresponding increase in the number of women achieving the rank of professor or positions such as president. Could this be a result of discrimination? Beginning in the 1960s, legislation such as the Civil Rights Act of 1964 and Title IX, was passed, and policies and practices implemented meant to correct discrimination (Wasserman, 2003). But discrimination persists. In its report on the status of women in science, MIT noted in 1999 that "the campus was slow to recognize other, more subtle forms of discrimination; it did not look like what we thought discrimination looked like" (¶ 25). This discrimination has been discussed in the literature under a variety of terms, such as unconscious bias, implicit bias, and gender schemas. Bem (1981) introduced the gender schema theory to explain how an individual's core sex identity is integral to the culture in which one is reared. Whatever term is used, these ideas often hinder women from advancing in many areas of society.

Valian (1998) described those gender beliefs that are held by all people and limit understanding of what women should, could, and can accomplish. While everyone employs gender schemas to categorize life, using them to limit women or minorities makes them problematic. When schemas turn into prescriptive roles, sexism and discrimination occur. Valian (2005) provided an example of an often-seen schema concerning women in work. Many people hold the belief that women are less concerned

than males about earning a high salary. Women who behave contrary to this plan, who desire a high salary, often meet with disapproval.

Meyerson and Fletcher (2000) suggested that gender discrimination has not disappeared, it "has just gone underground. Today discrimination against women lingers in a plethora of work practices and cultural norms that only appear unbiased" (p. 128). They stated that many everyday practices in society create situations that are biased, but because they are accepted as conventions, no one questions their inherent injustice.

Babcock and Laschever (2007) described several studies that revealed that people -- even women themselves -- still hold stereotypes about women. Their research proved that women under-value the work they perform. For example, when offered a specified dollar amount for a particular task, women more often than men accepted the amount offered. Men, on the other hand, were more likely to ask for additional money. Although the level of success was the same for women and men, women did not feel they deserved more.

Fernandez and Sosa (2005) conducted research on gendered roles in call centers. Evidence suggested that female job seekers, and the people hiring them, employed gendered notions that females are better than males at customer service jobs, resulting in a larger pool of female applicants and employees in that area. Their research attributed gender segregation to several points, including the unconscious idea that women are better suited for some jobs than men.

Examples of unconscious bias and gender schemas in academia are plentiful. An examination of letters of recommendation, essential for new jobs and for promotion and tenure, revealed gender bias (Trix & Psenka, 2003). Women were two and a half times more likely than men to receive short letters of minimal assurance; these letters were twice as likely to contain "doubt raisers" such as negative language, faint praise, or irrelevancies, and more likely to include references to personal life. Attention to training and teaching was more common in letters for women, whereas research, skills and abilities, and career received more attention in letters for men. Recommenders unknowingly stereotyped on the basis of gender when writing the letters (Trix & Psenka, 2003).

Phelan, Moss-Racusin, and Rudman (2008) found that a double standard in interviewing often exists for women. Communal applicants, or those who smiled more and presented themselves as team players, were evaluated as less competent whether they were male or female. Ironically, ambitious, self-reliant women were viewed as competent but were disqualified for being socially deficient.

Publishing is at the center of an academic's career and is crucial for a researcher. Tenure and promotion decisions are often based on the number of papers published in peer reviewed journals (Vesilind, 2000). Research has shown that bias toward women

exists in review of manuscripts. A researcher's project and future support depend on publishing. Budden, Tregenza, Aarssen, Koricheva, Leimu, and Lortie (2007) found that in a double blind review of manuscripts, representation of female first authors increased by 33%, indicating that a double blind review process is more beneficial for women

Spelke and Grace (2007) found that when a dossier was associated with a male name, 70% of the reviewers (both men and women) recommended tenure, but when it was attributed to a female, only 45% recommended tenure. Spelke and Grace noted that biases such as these can result in fewer women researchers working in higher education.

Towers (2008) found that women were one-third as likely as their male peers to be chosen as presenters at conferences, despite producing more internal papers per year and performing 40% more maintenance work than their male counterparts. The selection of researchers to give a conference presentation occurred in a closed-door meeting. Towers attributed this inconsistency to unconscious gender bias.

Valian (2005) discussed differences in teaching responsibilities for new faculty. She cited the example of a male faculty member teaching the same introductory course in his specialty every term, whereas a woman was expected to teach many different introductory courses. Thus, the man could focus time on his research, whereas the woman was constantly spending time developing another course.

Why the Disparities?

Valian (2005) wrote that gender disparities are sometimes attributed to an acculturation problem, with women not socialized to play by men's rules. In some respects this is true. Historically, academia in the United States was an institution created by men to serve men. Even today, many male-oriented practices remain. Being an academician means working more than a 40- hour week (Helfat, 2002). In the past, professors, who were usually men, had wives or mothers at home to tend to life issues (Hamilton, 2002). Today, female professors find they must work the 40-hour-plus week and tend to life issues, theirs and those of their families. The tenure system is built on an expectation that faculty will spend the first five to seven years of their faculty life working to achieve tenure. This time often coincides with the childbearing years of women, putting women at a disadvantage if they try to attain tenure and have children. As stated by Beaman-Smith and Placier (1996), "Women in academe are initiates who wandered into a ritual designed for men" (p. 3).

Tenure-track faculty positions are often at a premium, which means competition can be the game of the day, but women often shy away from competition. Niederle and Vesterlund (2007) discovered that when men and women correctly solved the same number of mathematics problems, men were twice as likely to choose a winner-take-all tournament incentive scheme. Babcock and Laschever (2007) described research confirming that women tend to be less competitive than men.

Examples of this distaste for competitiveness can be found in many places. Twice, in 1995 and in 2008, National Academy of Science membership was turned down by women because their husbands, with whom they collaborated, were not also invited to membership (Bhattacharjee, 2008). Nancy Jenkins could not separate her contributions from her husband Neal Copeland's, "as we did everything together on an equal basis." (Bhattacharjee, p. 259).

Possible Solutions

How can RAs use this knowledge and the following suggested solutions to assist faculty? While some solutions can be implemented by mid-level RAs and their staff, many must be the concern of upper administrators, such as vice presidents for research, who can interact with their peers to effect changes at the university level.

Overcoming the Bias

One way to overcome gender bias (Easterly, 2002) is through enforcement of laws such as Title IX, which states that "no person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance" (Title 20 U.S.C. Sections 1681-1688). Following on the heels of the Civil Rights Movement of the 1960s, women began to demand equal rights in all aspects of life, including education. Originally, supporters of equal rights for women planned to amend Title VI of the Civil Rights Act to add sex to the list of characteristics (race, color, and national origin) against which employers could not discriminate. Because civil rights leaders felt this would weaken the focus on race in the Civil Rights Act, Title IX was born. A series of court cases since 1972 has helped define and limit the effectiveness and reach of Title IX. While Title IX affects all aspects of education, it is most notably and successfully applied to athletics. For example, today more than 100,000 women participate in intercollegiate athletics, a four-fold increase from 1971. That same year, 300,000 women (7.5%) were high school athletes; in 1996, that figure had increased to 2.4 million (39%). Enactment and enforcement of title IX has also benefited women in academics. According to the National Center for Educational Statistics (NCES, 2007), between 1979 and 2005, the percentage of bachelor's degrees earned by women increased from 49 to 57 %. Between 1980 and 2005, the percentage of master's degrees earned by women increased from 49% to 59%. Women earned just under half the doctoral degrees awarded in 2005 (49%), an increase from the 30% awarded to them in 1980.

As seen above, women are not becoming full professors and administrators as often as one might think, considering the rise in females in education at all other levels. Federal funding agencies, such as the National Science Foundation (NSF), the National Aeronautics and Space Administration (NASA), and the Department of Energy (DOE), are being called upon to ensure that all grantees meet the terms of Title IX. Grantees must

ensure that they are complying with Title IX requirements to receive funds (Government Accounting Office, 2004).

Other solutions lie within the university structure itself. Solutions to subconscious bias may be as simple as using initials for first name to mask gender in letters of support and curricula vitae when this material is reviewed for tenure, promotion, or other advancement and award opportunities. As Budden et al. (2007) proved, when manuscripts were judged under a double blind review, the number of women who were published increased.

Modifying the promotion and tenure track process can be a solution. An action as simple as clearly defining the requirements for tenure and promotion and then regularly distributing those requirements to all can improve women's chances at receiving tenure and promotion (Marschke, Laursen, Nielsen, & Rankin, 2007).

Along with defining the requirements for tenure, it is important to define merit and success for each department. Uhlmann and Cohen (2005) demonstrated that merit and success are often defined differently for men and women within the same discipline. By giving merit realistic, consistent definitions, all will know what is expected of them.

University of Wisconsin-Madison established the Women in Science and Engineering program (WISE), with excellent results (Friedrich & Burstyn, 2005). The University of Montana, through an NSF ADVANCE grant, holds Women In Science Lunches and Breakfasts "designed to help build collaboration and a sense of community among women science faculty" (UM, 2009). Facilitating the development of such networks will give women a community of support and a way to "be in the know."

Educating faculty, chairs, deans, and administration that unconscious gender bias exists may be one of the most effective methods of ending it. Holding workshops, such as new chair training, or providing this information in orientation sessions are ways to get the word out (Stout, Staiger, & Jennings, 2007).

Providing evidence of the discrepancies in the numbers of female and male faculty at all ranks and in various disciplines will also help (Morrisey & Schmidt, 2008). Maintaining quantitative data is key to this effort (Marschke, Laursen, Nielsen, & Rankin, 2007).

Conclusion

Research shows that gender bias does exist, not overtly as in the past, but through gender schemas or unconscious bias. Unconscious bias occurs in every part of life, but when it plays a part in deciding whom to hire or to whom money is awarded, it must be dealt with. Being aware that such biases exist and making a conscious effort to overcome them will benefit women and the institutions at which they work.

RAs need to be aware that unconscious bias exists, and can appear in every-day activities such as awarding internal grants for research or even through a simple personal interaction. Perhaps, when everyone working in the academic research community is conscious of these concerns, it will become a welcoming place for both women and men.

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