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Gender Bias in IT Hiring Practices:

An Ethical Analysis

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### Abstract

With the current movement to increase the number of women in STEM-related careers, modified IT hiring practices may be considered debatably unethical. Studies cited in this work have asserted that female representation in STEM fields is integral not only to encouraging continued progression toward gender equality in the workplace but also to creating more inclusive products. In turn, some argue that when faced with reasonably comparable female and male candidates, a hiring manager should select the female candidate in order to increase the female representation in the company and provide a female perspective. However, it is simultaneously debatably unethical and even unconstitutional to provide a candidate with any sort of preference based solely on gender. Also relevant is the impact of automated talent acquisition systems on gender bias, and in turn the causes and effects of introducing a bias into hiring practices, whether consciously or unconsciously through humans or automated systems. The primary debate then becomes that while female representation in STEM fields is important, there may or may not be sufficient reasoning that this cause should supersede the efforts toward true gender equality in IT hiring practices. As a result, this paper analyzes the different frameworks that contribute to the ethics both in favor of and against introducing any form of gender bias toward women into IT hiring practices.

Considering the wage gap between men and women and the societal stigma against women in technical careers, it may initially seem obvious that women have had to combat a bias against their gender in IT hiring practices. According to the U. S. Census Bureau, in 2011, only 26-percent of those working in STEM-related fields were women (Del Giudice, 2014). This dramatic discrepancy between the number of males and females consequently started a movement to encourage more women to pursue careers in STEM. With a push toward creating an equal and inclusive work environment regardless of gender, it is inevitable that with this shift toward an increased number of women in STEM, the hiring practices of these fields must also change. However, some argue that the IT hiring practices may have moved too far in the other direction. Consequently, how to fairly hire individuals in STEM fields becomes a significant ethical issue. With the push to hire an increased number of women, individuals might hire females over their male counterparts in order to balance out the gender differences in the workforce (Ceci & Williams, 2015). However, it is debatably unethical to potentially hire women who may be less qualified than other male applicants just because they are women. This combined with the use of automated talent acquisition systems makes the idea of controlling bias in hiring practices increasingly complex.

Initially, in the circumstance where the skills of a female and male applicant are reasonably comparable, selecting the female employee based on gender can have potential benefits to the company and development of software. Simply, adding a female employee to a team primarily consisting of males adds another perspective and thus can potentially provide an additional level of analysis to the team. In fact, Stanford science historian Londa Shiebinger asserts that “as more women get involved in the sciences—or any field historically dominated by men—the general knowledge in that field tends to expand” (Del Giudice, 2014). In most cases,

particularly in the case of software engineering, the product that is being developed is something that will be used by both males and females. As a result, having a reasonable female perspective in the creation of that software allows the developing team to consider different ways in which females might interpret or use that piece of software thus making the product more usable and marketable. This has obvious financial benefits to the company.

Technology, just like anything else that is produced by society, is created in the image of its creator. As discussed in senior seminar, if the sole creator of the majority of technology is Caucasian males, then the resulting technology itself has the potential to reflect this. This is particularly apparent in the development of video games which have the reputation of frequently objectifying and sexualizing women (Lynch, Tompkins, Van driel, & Fritz, 2016). A standard has thus been created. As a result, in many video game franchises, this standard comes into play and is consequently expected. These types of games are consumed by society on a massive scale, and because the companies know that they make money, they will continue to be produced. It is possible that if at the outset of the development of these games, there was more of a female presence in the development process, some games that currently exist today may be significantly different or possibly not exist at all. In turn, if there is never a significant effort to shift the image of the creator, then significant change in the technology itself is nearly impossible. A new standard can never be set (Lynch, Tompkins, Van driel, & Fritz, 2016).

Nonetheless, some might argue that a female presence is not necessarily needed in all aspects of IT and software development and showing a bias toward women in hiring practices can actually be harmful to the success of software. There are clearly products that are aimed specifically to males, and in this case, it may be argued that a female perspective detracts from the target audience. Additionally, if the current paradigm is resulting in successful products and a

successful company, organizations might see little to no motivation to change the balance between genders in their employees.

Simultaneously, it seems inherently unethical to hire someone based on their gender. Assumingly the decision to hire a female over a male applicant is not solely based on gender, but gender being a factor in hiring at all violates the laws set forth by the United States Equal Employment Opportunity Commission which protects applicants from being treated “unfavorably because of that person’s sex” (“Sex-Based Discrimination” n.d.). This consequently brings about the ethical dilemma of affirmative action which includes the policies of “an institution or organization [that] actively engage in efforts to improve opportunities for historically excluded groups in American society” (“Affirmative Action” 2014). Though affirmative action policies are frequently discussed in reference to racial discrimination, considering the underrepresentation of women in STEM fields in history, they most definitely apply. However, many critics argue that affirmative action itself is simply unconstitutional and another form of bias as, in its own way, it can be argued to support a different form of discrimination by still favoring one demographic over another.

Essentially, the primary and potentially even the most compelling argument against actively attempting to increase the number of women employees at a company is that it is simply illogical to hire someone who may not be the most qualified candidate. The fear becomes that a slightly less qualified female would be hired over a slightly more qualified male, and hiring someone who is less qualified or competent would not seem to truly benefit the company in any way. In a practical study by Stephen Ceci and Wendy Williams, they found that “in mathematics, women constituted 20% of applicants but 32% of hires; in electrical engineering women were 11% of applicants but 32% of hires; in chemistry women were 18% of applicants but 29% of

hires; and in physics they were 12% of applicants but 20% of hires” (Ceci & Williams, 2015).

This emphasizes that there does exist some level of bias toward women in STEM hiring practices. Additionally, simply as a matter of pride and honor, it would not seem that a female applicant would feel accomplished in receiving a position simply based on gender. This idea seems counterintuitive to the movement to create more gender equality in STEM fields. If gender equality is treating both men and women equally, then giving an advantage to women is simply not gender equality. This simultaneously brings up the issue of if trying to actively balance the gender gap in a workplace truly contributes to gender equality.

Unfortunately, it is simultaneously all too easy for the bias to shift in the other direction against women. It is possible that if some slight preference is not shown to women that instead the bias will shift in favor of men. In fact, in the same article by Ceci and Williams, they conducted an experiment and found that “applicants selected the lower performing male over the higher performing female in 29% of the cases compared to selecting the lower performing female over the higher performing female in only 2% of the cases,” thus further emphasizing that there still exists a bias toward men in STEM hiring practices (Ceci & Williams, 2015). Simultaneously, the way that men and women are perceived under the same circumstances can be different during the hiring process. When a man might be considered assertive and confident, a woman using similar language may be considered bossy and conceited (Trinh, 2016). In turn, this can create a negative perception of female candidates in general during the hiring process.

Additionally, frequently the individuals doing the hiring are Caucasian males. Because Caucasian males are the current majority in the IT field and even more so a majority of individuals in leadership positions in the IT field, it may be said that these individuals look to

hire others like themselves. If Caucasian males see others like themselves as the ideal employee, they are simultaneously more likely to hire other Caucasian males, thus persisting a bias toward males and perpetuating the cycle of a male majority in the STEM field. All in all, bias in hiring practices seems inevitable. All humans have an inherent bias to some degree. As a result, as hiring has a human component, it seems almost impossible to eliminate bias in IT hiring practices. However, automated talent acquisition systems aim to do just that.

Nonetheless, automated applicant review and hiring systems have their own set of ethical issues when it comes to creating the fairest way to select the most qualified candidates. After all, computers and algorithms do not know explicitly know the gender of an employee and cannot use the name of an employee to potentially show bias based on gender. They can instead theoretically use a subset of predefined rules in order to select the best candidate without bias (Maguire, 2016). However, it is actually possible for some bias to be introduced into this automated process depending on the criteria used to evaluate the qualifications of a candidate. For example, in Robyn Melhuish's article "The Hidden Ways Gender Bias Can Sabotage Recruitment," Melhuish explains that certain words are considered masculine or feminine and are more likely to be used on resumes of individuals of that corresponding gender (Melhuish, 2015). As a result, if the algorithm searches for words that are primarily masculine, an unintentional bias toward male candidates may occur. In Keith Kirkpatrick's article "Battling Algorithmic Bias," he points out that "because algorithms simply present the results of calculations defined by humans..., they often inadvertently pick up on the human biases that are incorporated when the algorithm is programmed (Kirkpatrick 2016)

Additionally, it is possible for the automated system to use the characteristics of those who are currently successful at the company to determine what is desirable in a potential



candidate. To reiterate what was discussed in class, this is an issue because Caucasian males are likely to be the majority of those who have been successful or in positions of power. This is a result of the fact that Caucasian males are simply a majority combined with the time it inevitably takes to show success at a company and the historical bias against technical women. As a result, the same issue arises as if the Caucasian males themselves were showing preference to those candidates who were often like them. Again, the male majority is consequently perpetuated. Simultaneously, women are more likely than men to have gaps in their employment history due to taking a leave from work to care for their children (Parker 2015). This is another area where an automated system may see that gap in employment, view it as a red flag, and show an unintentional bias against women.

Nonetheless, companies may have other motives for showing a bias toward hiring women. If a company can increase their percentage of female employees, this often becomes a means of good publicity. Particularly with the new cultural paradigm shift and the push to have as much gender equality in STEM as possible, companies that are able to boast high percentages of female employees or additional efforts to accommodate women employees are often seen as more progressive and more desirable in the public light. Articles describing which companies are the most “female-friendly” such as the 2016 *Forbes.com* article “Which Big Tech Companies Employ the Most Women?” by Karsten Strauss clearly exhibit favor to and an increasingly positive public perception of the corresponding companies.

The ethical issue then becomes if this actually further splits the divide between men and women. If the goal is equality, then taking additional strides to accommodate women is again just another form of showing bias potentially motivated by good publicity. However, it may be counter argued that since women have not been previously prevalent in the field, current

practices do not take into consideration their needs. As a result, shifting these practices is required simply to ensure that men and women are treated fairly and ethically once in the workforce.

Simultaneously, it may be argued that the issue of the imbalance between men and women in STEM fields is actually not a result of biased IT hiring practices. Instead of making any shifts in hiring practices that might favor women and consequently create an equally unfair bias toward female candidates, the focus should be shifted to encouraging more women to pursue an education in STEM-related fields and changing the societal perception of women in STEM. Because there are fewer women studying IT-related disciplines, naturally there will be fewer female IT candidates and consequently fewer female hired IT employees.

Historically, women in STEM have had a social disadvantage. Until relatively recently, there has been a significant societal stigma against women doing what was traditionally considered a “male” job (Bryner, 2007). As a result, encouraging young girls to explore computing and engineering counteracts this stigma and is in fact a significant movement in both current education and politics. In theory, this consequently will result in more women pursuing STEM in higher education and thus a larger pool of female candidates for STEM-related jobs. In turn, more female candidates statistically mean more female hired employees which ideally then balances out the discrepancy between the number of male and female workers currently in STEM fields without explicitly altering any sort of hiring practice.

Unfortunately, this discrepancy does currently exist, and it can be counter argued that a key to encouraging young girls to explore and pursue STEM in the future is seeing more women as STEM role models now (Goodman & Damour, 2011). Consequently, this would demand that current hiring practices do influence the future of gender equality. In general, children want to

emulate what they see, and if they do not have the opportunity to see successful and powerful women in STEM-related fields, it consequently becomes more difficult to imagine themselves in those positions. In turn, it may not be enough to wait until shifts in the current educational system and societal perceptions of women in STEM cause the gender discrepancy to balance out on its own (Goodman & Damour, 2011). Hiring practices that favor women right now can have a significant effect on encouraging young women to pursue STEM-related fields in the future and thus significantly impact this movement.

Essentially, ensuring that companies hire women in STEM-related fields does have the ability to impact the future of female representation in STEM. In turn, female representation in the workplace has the potential to offer a distinct perspective that can then shift the paradigm of the resulting product that is produced by that organization. However, introducing a bias toward women during the hiring process is still a bias, and gender bias in any form seems inherently counterintuitive to advocating actual gender equality.

As a result, it is a personal conviction that preference should never be shown to a female applicant simply based on gender. While it is understood that there may always exist some inherent bias due to the flaws of human nature, it is nonetheless not something that should be actively encouraged for the sake of a cultural movement or the reputation of a company. The purpose of the hiring process is to select the candidate that is most qualified for and most likely to succeed in the position in question using the fairest methods possible. Even under the circumstances that a female and male applicant are reasonably comparable in competency, it is still unethical to show favor to the female applicant based on gender because theoretically gender should not have any impact on the effectiveness of an employee. Simultaneously, as the societal stigma against women in technology is progressively decreasing due to other educational

movements and the progression of society itself, any IT hiring practices that show preference to women will ideally become unnecessary. What will truly mark the equality of men and women in STEM fields will be when the females of the industry no longer are specially referenced as “females in STEM.” Hiring practices that isolate the fact that a candidate is a “female in STEM” is thus actually counterproductive to the progressive movement.

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