Pattern Recognition: How hidden bias operates in tech startup culture

Most people like to believe they judge others on their merits, and not by their gender or ethnicity. Neuroscience has shown this isn't always the case, so what can we do about it?

By *Freada Kapor Klein and Ana Díaz-Hernández*

DOI: 10.1145/2604991

Silicon Valley prides itself on being a perfect meritocracy, but there is an endless search for short cuts, or “pattern recognition,” that can be used to spot the next hugely successful entrepreneurs: Male (usually Caucasian, but Asian is OK, too), young, educated at elite institutions (whether graduated or not), and highly technical.

If that really is the pattern that reflects the best and brightest, then is it the case that women and underrepresented racial/ethnic groups are just devoid of the skills and intelligence necessary to succeed in this industry? Or, as more recently gets asserted, is it

a pipeline problem? Is not enough talent reaching the desks of the recruitment managers?

Most of us would like to believe we really are gender-blind and color-blind, that we judge others based on their individual merit and not by their gender or ethnicity. But is that true? Thanks to advances in neuroscience, we're learning a lot more about how we make decisions, especially at the unconscious level, and raising fundamental doubts about this self-belief.

Dozens of fascinating studies demonstrate that merely changing identifying information on a resume, a theater script, or a journal article dramatically alters how likely it is to be accepted.

Quite recently, near-identical resumes were sent to faculty members to evaluate candidates for a lab manager position. Half were named John and half were named Jennifer [1]. Jennifer was seen as less competent, more likable, less likely to be considered worth mentoring, and offered a starting salary of \$26,508 versus John's \$30,238. Even more striking was the fact that there were no differences in how the candidates were ranked by male or female faculty, younger or older professors, or across the disciplines of physics, biology, and chemistry.

Quite germane to technology, a fascinating series of studies were done by Sapna Cheryan at the University of

Washington, and colleagues at other institutions, exploring what impact the physical work environment might have on female computer scientists' interest in working there. Simple changes such as swapping a nature poster for a “Star Trek” poster were shown to boost undergraduate women's interest.

All of the advantages of diversity—ideas for startups born of different lived experience, new approaches to problem-solving and managing—can only be achieved if we challenge the belief that there is only one best way to run a meeting or a company or there is one type of qualified candidate for every job. These beliefs may hold a grain

of truth, but they also leave room for bucketfuls of hidden biases.

Our sister organization, the Level Playing Field Institute, recently studied the impact of hidden bias in tech workplaces—both large companies and startups. What was striking was the degree to which engineers and managers in the same companies have day-to-day experiences that differ dramatically. Even though they're often on the same team or in the same department, some feel respected and encouraged, while others feel excluded and ignored. These views aren't randomly distributed across the group of engineers and managers, they strongly correlate to race and gender.

A particularly striking finding was while 60 percent of men in startups believe diverse teams are better at innovation and problem solving, only 41 percent would be in favor of a company-wide hiring practice to increase diversity. Really? If 60 percent believed, for example, knowing how to code made for better hires, would only 41 percent

be in favor of hiring people who knew how to code?

In that same study, women and underrepresented people of color were far more likely to believe in the importance of diverse representation on teams and to support company hiring practices to achieve diversity than their white, male counterparts. Underrepresented people of color were nearly twice as likely as whites to be in favor of a company-wide practice to increase diversity (80 percent compared with 46 percent). Eighty-two percent of men in startups believed their companies spent the “right amount of time” addressing diversity.

Until our experiences of our shared workplaces converge, we will continue to confuse “style and fit” with merit. This undermines fundamental fairness and robs individuals, companies, and society of the benefit of everyone's talents.

Imagine a company that innovated in order to figure out how to achieve bias-free hiring, or to help employees

balance their careers, children, and other life pursuits. As long as we have one and only one model of success (Marissa Mayer spoke of working 20 hours a day at Google and sleeping under her desk) and one view of what talent looks like (either a graduate or a dropout of a top-tier university), we'll all lose out. Economies cannot remain—or become—competitive without finding all available talent, nurturing it, and providing opportunities for budding entrepreneurs, investors, and employees from every corner.

HOW BIAS UNFOLDS

In the United States, there is a significant underrepresentation of African-American and Latino employees generally, and female engineers specifically within startups. This is a complex phenomenon, but mostly due to three factors:

1. Lack of social network or college pedigree for diverse applicants.
2. Risk profile and compensation.
3. The bias of “culture fit” related to race, class, and/or gender.

The first reason, the social network, is probably the most prevalent and the hardest to track. It's very difficult to measure the instances of applicants who did not even get the opportunity to enter the hiring funnel. Most technology companies hire primarily by employee referral; current employees are compensated when their employer hires people they recommend. By using these networks, the same schools, backgrounds, and former employers are represented. Many candidates coming from different networks, schools, and backgrounds are generally unaware of this dynamic, and expend a lot of time and energy dropping applications into a vacuum, never to be considered.

The second reason, risk profile and compensation, refers to cultural reasons regarding how diverse applications tend to treat risk. Candidates from these groups may get through the process of interviewing and want to work at the startup, but they don't understand the equity opportunities or prefer the cash liquidity over the potential upside of having equity in a growing company. Many recently graduated Latino and African-American students have significant student loan debt and financial responsibilities to support their families—how can they choose a lower salary option and risky equity packages, when liquidity might actually be very important to this candidate? Although liquidity is not the primary motivation of every diverse candidate, it is simply an example.

The third reason, “X candidate is not a culture fit,” refers to the most blatant bias seen in tech recruiting, yet under the guise of an objective business reason. This statement represents a series of concerns and biases, masqueraded behind a very simple, harmless sounding statement. While fit with a company's culture, especially at a startup is important, the specifics need careful examination. For some candidates, it may mean they don't fulfill the physical characteristics (not a white, male hacker) recruiters expect for someone doing this role. For others, it may mean the candidate does not seem to like drinking as much as the average member of the company. The recruiting team, which is trained to pattern recognize in a highly generalizable

Economies cannot remain, or become, competitive without finding all available talent, nurturing it and providing opportunities for budding entrepreneurs, investors and employees from every corner.

fashion, looks at a particular role and tries to find candidates who match the qualifications and skills of the first few candidates doing that same role. However, the fact that the model is being based on a 25 year old, white, male who dropped out of Carnegie Mellon to join Y-Combinator before getting acquired by this hot startup makes this profile very hard to replicate. Are these characteristics really good heuristics for hiring success?

OPPORTUNITIES FOR IMPROVEMENT

There are some interventions employers can take to ameliorate these issues, though.

- ▶ Anonymize resumes and remove university affiliation.
- ▶ Prime candidates.
- ▶ Reconfigure employee referral benefits.
- ▶ Set an explicit diversity hiring goal.

The first opportunity, anonymizing resumes, is designed to help an organization better understand how its hiring has been biased, and in response, to have an honest conversation about the validity of these hiring proxies. The resume study mentioned previously showed the mere existence of an African-American or Latino name on a resume, all other factors being equal, is of great disadvantage to an applicant. We are proposing you isolate a particular team or function and run a pilot, stripping a subset of new resumes of

name and school attended, before reviewing the candidate. Now codify the results and compare it to your control, which was not anonymized. Did you offer more phone screens to diverse candidates? Interview some of these candidates and confront some of your organization's assumptions about the correlation between college attended and competency.

The typical proxies of success, like school attended or GPA, have been found by organizations like Google to not be predictive of employee success. Similarly, The College Board has recently overhauled the SAT because, among many failings, there was a direct relationship between increasing family income and increasing scores. Many technology companies currently use these and other similarly unproductive factors as proxies for future success at their organization. Laszlo Bock of Google proposes shifting interview techniques toward expressed general cognitive ability and creative problem solving of real-workplace situations [2].

The second intervention we propose is priming candidates once they make it through the initial screening process. Many diverse candidates come from backgrounds where strategies for getting jobs at technology companies are not understood—often nobody in their peer group has ever pursued a career in the technology sector. Making sure candidates are primed with information about the style, length, tone, and general content of the interview tasks can be immensely helpful in making sure they are comfortable and not completely surprised by the interview.

A fascinating study confirms the importance of priming college freshmen [3]. A video that depicted common anxiety-inducing experiences (for instance difficulty finding study groups, or concerns that everyone else is smarter) dramatically assuaged these issues. The video promoted social belonging by demonstrating these experiences are common and not a sign of an individual's weakness, and had a lasting impact. In fact, the African-American students who viewed the video had significantly higher GPAs and graduation rates than their counterparts who had not.

In addition to priming a candidate

during an interview, employers should consider better informing candidates of their options as they approach the final stages of extending an offer. The culture of recruiting often treats candidates as sales targets to close, rather than team members to nurture and include in the process. Many diverse candidates are not aware of the cost of living in large cities, don't understand stock liquidation, are not aware their stake in a company can get diluted with further funding rounds, or don't know how much runway the company has available to continue operating, among other big issues. Instead of seeing this as a win because you get a better deal out of this candidate, be candid about the reality of working at this company. In the end, any purposeful exclusion of important information will become very evident, and the employee may grow to resent the employer or hiring manager, leading to a negative working relationship.

A third intervention we recommend is for hiring managers to reconsider the process of paid employee referrals to make new hires. Encouraging employee referrals at an exorbitant rate (\$5,000, per hire, for instance) may actually encourage employees to put anyone through the pipeline, instead of the most qualified. This serves to further flood the hiring pipeline with candidates who resemble your existing workforce. Employees tend to know people who look like them, have similar interests, and studied at the same school or peer institutions. If hiring managers reduce the monetary incentive to put every living soul through the pipeline, and increase the incentives for diverse candidates specifically while still keeping it under an exorbitant amount (perhaps no more than \$1,000 or \$2,000 for diverse candidates), the incentives will be better aligned with building a better, more diverse team, and less with making an extra \$5,000 from a referral.

Our final recommendation is to be open and honest about your desire to diversify your workforce. If a company is not outwardly honest about this intention, applications from diverse candidates will not simply increase of their own accord. Candidates want to know their application will be taken seriously,

despite their background differing from the norm in some way. Companies should make it an explicit initiative both internally (within teams) and externally (through public material such as websites, media communication, and recruitment literature). Companies gain a reputation as "inclusive" or "not inclusive"; being open about your intentions can lead to the creation of a culture and reputation for inclusivity. Internally, we recommend actually setting a concrete goal for the company to hit. Without a diversity goal it can be hard to track success.

Such a goal could take the form: *"We want our company to look like the available candidate pool of those with relevant education and/or experience within 24 months, with progressive check-ins every quarter. We're specifically focusing on the hiring of Latino and African-American candidates for every role where we are most deficient, as well as more female engineers."*

Since setting diversity goals often engenders questions, if not outright backlash, it's important to explain the business reasons for doing so. Pointing out the changing demographics of your customers will be important if this is an important part of your customer/client/user base. Citing research on the advantages to creativity and profitability of diversity may be important to your current employees.

CONCLUDING THOUGHTS

Hidden biases of hiring managers are holding back organizations from hiring in a more meritocratic manner, therefore limiting the diversity of their companies. The human brain is built to recognize patterns based on information it has seen before, so hiring tends to take the form of hiring more people who are like the existing workforce. This means highly qualified candidates who break these assumptions about gender, background or ethnicity are not getting a fair evaluation, or even a first look.

We recommend thinking carefully about what qualities are really crucial in executing a job well, and hiring based on skills relating to the actual execution of the role. Steps that mitigate the recruitment managers' implicit biases, and measures such as

anonymization of resumes, may help organizations get closer to their meritocratic ideals. How many other examples can you think of that are used in tech companies to "identify talent" but which, in reality, are merely proxies for accidents of birth and not for merit or potential?

We have developed the Kapor Center Impact Fellowship, which places students from underrepresented backgrounds at startups for the summer. Most of our candidates are from "non-Ivies," and many come from the South and Midwest regions of the United States—areas not generally associated with the technology industry. We've taken a more holistic approach to evaluate our candidates; we look at general cognitive ability to do real workplace tasks, writing ability, excitement for the role and mission of the organization, motivation, long-term goals, and distance traveled. We've gotten an outside party to evaluate their technical ability and have been quite impressed with our results thus far. We've effectively rejected typical proxies like SAT, GPA, or school attended, and are finding exciting results.

References

- [1] Moss-Racusin, C. A. et al. Science Faculty's Subtle Gender Biases Favor Male Students. *PNAS* 109, 41 [2012].
- [2] Bryant, A. In Head-Hunting, Big Data May Not Be Such a Big Deal. *New York Times*. June 19, 2013. http://www.nytimes.com/2013/06/20/business/in-head-hunting-big-data-may-not-be-such-a-big-deal.html?_r=1&
- [3] Walton, G. and Cohen, G. A Brief Social-Belonging Intervention Improves Academic and Health Outcomes of Minority Students. *Science* 331, 6023 [2011].

Biographies

Freeda Kapor Klein is the founder of the Level Playing Field Institute, which strives to increase fairness in education and the workplace by closing the opportunity gap and removing barriers to success. The Institute's Summer Math and Science Honors Academy (SMASH), a three-summer high school program serving underrepresented students of color, works to ensure racial equity within the fields of science, technology, engineering, and mathematics. As a Partner at Kapor Capital, Klein invests in women entrepreneurs and entrepreneurs of color whose IT start-ups aspire to generate economic value and positive social impact.

Ana Díaz-Hernández is a venture analyst at Kapor Capital and manages the Kapor Center Impact Fellowship, which places students from underrepresented backgrounds in summer internships at tech companies. She is a graduate of Stanford University and participated in several research projects relating to urban planning, public health, and civic engagement. She has also worked at two startups, Spool and Dropbox, doing product marketing, sales and internationalization.

Copyright held by Owner(s)/Author(s).