CIRCUMVENTING DISCRIMINATION
Gender and Ethnic Strategies in Silicon Valley

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This article compares the experiences of U.S.-born white women, Asian men, and Asian women immigrant engineers in Silicon Valley. It focuses on two particular characteristics of the region’s economic structure: the norm of job-hopping and the centrality of networks to high-skilled workers' career livelihoods. While these characteristics might be assumed to exacerbate ethnic and gender inequality, the specific history of these groups’ entrance into Silicon Valley’s hi-tech industry enabled them to use these characteristics to their advantage in circumventing bias. The comparison of white women’s strategies to Asian immigrant men’s and women’s strategies highlights the interaction between the structure of opportunities, group histories, and network resources.

Keywords: gender inequality; engineers; flexible specialization; Asian immigrants; Silicon Valley

Silicon Valley’s exponential growth and rapid pace in hi-tech product and service innovation captured worldwide attention in the 1990s. As “valley watchers” flocked to study the region, a pervasive discourse emerged about Silicon Valley, lauding its commitment to meritocracy as key to its success. Journalists wrote that “one of Silicon Valley’s secret weapons is its openness to immigrants and to women” (Vital intangibles 1997) and reported that the region is “the quintessence of the American Dream... People rarely care what school you attended, your ethnic background, or your family pedigree. They want proof of IQ” (Reinhardt and

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Hamilton 1997). Academics joined the praise as well, observing that “the single important criterion in determining success is work performance” (Rogers and Larsen 1984, 154). Even the region’s billboards proclaimed that this was where “The Glass Ceiling Meets the Glass Cutter.”

The claim of meritocracy is worth a closer look because women in general, as well as Asian men and women, are well represented in the high-skilled sector of this industry. While there has been significant research analyzing the experiences of Asian (male) immigrant engineers in Silicon Valley (Alarcon 1999; Dossani 2002; Saxenian 1999), the experiences of women engineers have been largely ignored (Hyde 2004). This is surprising for three reasons. First, the participation of women in science and engineering has been a long-standing concern (National Science Foundation 2000b) not only because of a U.S. labor shortage in these fields but also because previous studies have consistently documented mechanisms of gender inequality and bias. Second, although women still represent only a fraction of Silicon Valley’s high-skill, hi-tech labor force, they constitute a critical mass in the region that is absent in other science and engineering industries. In 1990, both U.S.-born and foreign-born women represented approximately 17 percent of the engineering and scientist work force in the region (Alarcon 1999), in comparison to the nation overall, where women held 8 percent of engineering jobs in 1993 (Lal, Yoon, and Carlson 1999). When considering women in core information technology occupations, women are even better represented, composing 28 percent of this workforce (Ellis and Lowell 1999). Asians, in particular ethnic Chinese and Indian immigrants—in the region, 84 percent of the former and 98 percent of the latter are foreign born (Saxenian 1999)—are also well represented in the hi-tech work force. In 1990, they accounted for 21 percent of Silicon Valley’s technical workforce (Alarcon 1999; Saxenian 1999), in comparison to 10 percent in the United States (National Science Foundation 2000b). Third, leading scholars of Silicon Valley have argued that the hi-tech industry’s “regional advantage” (Saxenian 1994) stemmed from its economic structure of flexible specialization (Piore and Sabel 1984), identifying key characteristics in this mode of economic production that makes it well suited to adapt to the rapid demand fluctuations of global capitalism. Silicon Valley thus represents the shift from the Fordist era of mass production to production that is at least partly based on specialized firms interconnected through a dense web of networks (Piore and Sabel 1984). This poses the question of how the organizational mechanisms that produce gender and ethnic inequality are affected by the shift in economic structure.

To answer this question, I explore gender and ethnic inequality in the hi-tech industry through analysis of 54 in-depth interviews of white and Asian
men and women engineers who work in Silicon Valley. I focus on the comparative experiences of U.S.-born white women on one hand and primarily foreign-born Asian men and Asian women on the other. While this categorization does injustice by collapsing the experiences of Asian immigrant women and Asian immigrant men, my analysis was guided by the accounts of these respondents. In particular, Asian immigrant women characterized their experiences and trajectories as primarily shaped by their ethnic status (and the attendant ethnic resources and networks) rather than their gender status.

In investigating the experiences of white women, Asian men, and Asian women, I identify two central characteristics of flexible specialization that potentially affect those who work in Silicon Valley. First, I show how the characteristic of job-hopping in the region serves as a useful strategy by which these groups could circumvent employers and firms that they viewed as discriminatory. Notwithstanding the regional discourse on meritocracy, white women, Asian women, and Asian men report facing forms of bias that are well documented in past studies, such as gender or ethnic typecasting and lack of access to firms’ inner networks. However, they also report being able to turn the tables on biased employers by job-hopping to firms that they viewed as more egalitarian. Second, I show how the region’s reliance on networks did not disadvantage white women, Asian men, and Asian women. This is counterintuitive because lack of access to key networks has been consistently identified as problematic in studies of work and organizations. However, because of the specific histories of these groups’ entrance into Silicon Valley, respondents reported being able to create and tap into resource-rich, cross-rank, gender- and ethnic-based networks that could rival the utility of “old white boys’ networks.”

The comparative perspective reveals that while white women, Asian women, and Asian men used the same strategy of job-hopping, their network resources channeled them into divergent trajectories. White women reported using networks to locate jobs and firms that were women friendly and believed that they could or had achieved significant success in these more egalitarian firms. Two larger-scale studies on hi-tech firms have also suggested that women in hi-tech are tapped into the right networks for movement into mainstream firms (Baron, Hannan, and Burton 1999; Peterson, Saporta, and Seidel 2000). In contrast, Asian respondents (both men and women) reported job-hopping into co-ethnic-run firms, or moving into entrepreneurship themselves, motivated partly from pessimism about overcoming ethnic typecasting in white majority firms and partly because they faced a different structure of opportunities. By 1988, Chinese and Indians were CEOs of 24 percent of hi-tech firms started since 1980, an impressive
feat given that this was not ethnic entrepreneurship in the peripheral or secondary sectors but rather entrepreneurship in a sector that accounted for one-third of U.S. real economic growth from 1995 to 1997 (U.S. Department of Commerce 1999).

**ETHNIC AND GENDER INEQUALITY IN ORGANIZATIONS**

Research on work organizations consistently documents the impact of race and gender on individuals’ career mobility (Baldi and McBrier 1997; Bielby and Baron 1986; DiPrete and Soule 1988; Mueller, Parcel, and Tanaka 1989). Three interconnected mechanisms are consistently highlighted in the literature on organizational inequality. First, studies revealed how organizational mechanisms channel women and racial/ethnic minority men into less prestigious tracks that result in intra-organizational job segregation (Collins 1997; DiPrete and Soule 1988). Second, individuals in these groups can be “de-skilled” through differential access to training (Knoke and Ishio 1998; Mueller, Parcel, and Tanaka 1989; Nkomo and Cox 1990), thus truncating opportunities for mobility. Third, informal processes can exclude these groups from key networks and from mentoring relationships (Baldi and McBrier 1997; Kanter 1977), relegating them as outsiders to organizational culture. These informal processes differentiate between who gets ahead through a “sponsor” model (exemplified by Kanter’s [1977] concept of “homosocial reproduction”) and who gets ahead through a “contest” model that is based on formal criteria (Baldi and McBrier 1997; Mueller, Parcel, and Tanaka 1989). For these reasons, organizations with formal personnel guidelines are viewed as more egalitarian.

These mechanisms of organizational inequality have been identified in studies specific to science and engineering occupations. The findings with respect to women generally indicate that a consistent gender pay gap (Prokos and Padavic 2005) exists regardless of cohort status and that a glass ceiling may be present that poses obstacles to women’s attaining positions of authority. The National Science Foundation reports, for example, that while there has been an increase in women engineers, only 13 percent of women engineers reported management as primary work activity, versus 31 percent of men (1991, 6). Asian men and Asian women also face a race or immigrant disadvantage in the attainment of managerial positions (Fernandez 1998; Tang 1993). For example, analysis of the Survey of Social Scientists and Engineers data shows no income differences between Asian and non-Asian engineers but consistent differences in achieving
managerial status and positions of authority (Tang 1993). Surprisingly, in investigating whether Asian women face “double jeopardy” in science and engineering, Tang (1997) finds that Asian women do better than other women (including white women), suggesting that race and gender are not additive disadvantages in these fields.

Ethnographic studies of scientists and engineers also found a gender or ethnic/racial disadvantage shaped by informal processes. Women engineers report that their male colleagues often have “patronizing” attitudes, treating them as they would a daughter or secretary (Carter and Kirkup 1990), and workplace settings where a “locker room culture” prevails (McIlwee and Robinson 1992). More broadly, researchers argued that engineering and mathematics is where “patriarchy got the moon” (Hacker 1990, 109) and where technical skill is equated with masculinity (Cockburn 1991).

Asian men and Asian women engineers face a different typecasting, as technical “workhorses” (Iwata 1993). In an analysis of the performance evaluations of 24 U.S. companies, DiTomaso and Smith (1996) found that Asian Ph.D. scientists had lower ratings in promotability despite high ratings in technical knowledge, and Tang (2000) found that Asian engineers had difficulties switching from technical tracks to managerial tracks. A survey study of Asian professionals in Silicon Valley (Iwata 1993) found that two-thirds of Asians perceive themselves as being disadvantaged in attaining managerial status, and 80 percent also believe that Asians were underrepresented at the highest levels of their companies. Respondents viewed exclusion from the inner circles of their companies as a key reason for unequal outcomes.

FLEXIBLE SPECIALIZATION IN SILICON VALLEY

A unifying theme in the mechanisms of inequality identified in these studies is that they focus primarily on intra-organizational processes, assuming that individuals’ trajectories were contingent on mobility along an internal career ladder. Epitomized by Whyte’s (1956) “organization man,” this road to mobility reflected the large, hierarchical firms that dominated in the Fordist era of mass production. The economic structure of Silicon Valley, however, is better characterized as flexible specialization (Piore and Sabel 1984), a mode of production that is viewed as a response to a change in consumption patterns that arose with the improvement in the technologies of communication (and the advent of “real time”) and the globalization of capitalism. Given the more ephemeral tastes of consumers, mass production using expensive, rigid machinery became less profitable,
especially within the context of rising international competition. In contrast, flexibly organized economies have a “regional advantage” (Saxenian 1994) because of the proliferation of small, specialized firms linked by dense networks, which is an organizational structure that is well suited to adapt quickly to the fluctuations of globalized capitalism.

Here, I highlight two characteristics of Silicon Valley’s economic structure that affect high-skilled workers. First, the region has a “high velocity labor market” (Hyde 1997) as characterized by fluid organizational boundaries and by the norm of job-hopping in the region (Baron, Hannan, and Burton 2001; Carnoy, Castells, and Benner 1997; Hyde 1997). A high-velocity labor market stems from the fact that corporations have relinquished responsibility for their workers (Harvey 1989; Kumar 1995) and also reflects the career mobility strategies of high-skilled workers. From the perspective of companies and employers, flexibility is partially achieved through the ability to quickly reshape workforce size in response to market fluctuations, and workers are thus expected to be accountable for their own careers. From the perspective of workers, job-hopping is a means by which one can maintain marketability by acquiring a breadth of experiences and skills. In this manner, workers with sought-after skills can potentially benefit from a high-velocity job market, because “flexibility represents a new form of entrepreneurship in which the individual worker markets his or her capital portfolio among various ‘buyers’” (Carnoy, Castells, and Benner 1997, 30).

The second characteristic of note follows from the first: To survive in this situation of heightened instability, high-skilled workers must maintain extensive networks across the region that supply them with job-relevant information and contacts (Piore and Sabel 1984). Given the break in the implicit labor contract between employer and employee, individuals are charged with ensuring their own livelihood. Nardi, Whittaker, and Schwarz (2000, 2) write, “Rather than being nurtured by institutionalised group structures, we found that workers are increasingly thrown back on their own individual resources. . . . Access to labor and information comes through workers’ own social networks—structures they must carefully propagate and cultivate themselves.”

These two characteristics suggest to me a marked break from the assumptions of the previous literature on ethnic and gender inequality among high-skilled workers because it points to the relevance of interorganizational processes (the ability to move from organization to organization), and the factors that influence these processes (mainly network resources), as fundamental for understanding ethnicity and gender in economies such as Silicon Valley. While this reliance on networks is potentially
problematic given past research, the fluidity of organizational boundaries suggests that workers are not trapped or held captive in facing organizational mechanisms of inequality, provided of course that they have the resources to achieve lateral mobility and that firms exist that have more egalitarian cultures and processes.

**DATA AND METHOD**

This study is based on 54 semistructured interviews of high-skilled, white and Asian men and women working in Silicon Valley. The interviews were conducted between March 1999 and January 2001; all interviewees worked in the hi-tech industry in Silicon Valley and were in engineering jobs or jobs that require engineering background at the time of the interview. With the exception of four interviews, the data were collected before the Internet bust of late 2000. Interviewees were chosen using a snowball method. Initial respondents were located from a number of sources, including contacts garnered from attendance at specialized engineering society functions, solicitation of professors at major universities in Taiwan and India for referrals to graduates they sent abroad, an ad in an alumni magazine, and referrals from acquaintances. Interviews ranged from one to two hours and occurred primarily at interviewees’ workplaces. They were audiotaped and fully transcribed.

One important limitation of the sampling scheme is that it yielded an overrepresentation of successful engineers. This stems from both the manner in which the initial contacts were obtained and the subsequent snowball sampling. In terms of the initial contacts, engineers who are leaders or vocal in networking organizations, who are likely to be referred by professors, or who volunteer to be interviewed are more likely to be successful and satisfied with their careers. The initial contacts then referred me to other members of their networks, who were subsequently also more likely to be successful. The argument of this article is that job-hopping and networking strategies were important to the career livelihoods of white women, Asian men, and Asian women. While these strategies were evident among my respondents, it is likely that the sampling scheme overlooked those for whom these strategies were not available.

All interviews were conducted by the author, who is a second-generation Chinese American woman. My gender and ethnic background were advantages during the interview process, facilitating rapport with the interviewees. It was my perception that white women engineers were willing to be open about their experiences with me at least partly because of my gender,
and it was common for Asian respondents to ask me about my ethnic background and generational status, which then served to create a bond between us. This was true of both Indian and Chinese respondents because their identity was not only shaped by their particular ethnic background but was also shaped in contrast to (white) “Americans,” of which I was not seen as a member.

During each interview, respondents were first asked to give a detailed history of their careers. From this point, the interview schedule was designed to elicit information around three primary topics of interest. First, respondents were asked about their perceptions of meritocracy in Silicon Valley and what they viewed as the necessary criteria for mobility. Second, respondents were asked to explain the types of networks they were involved in, how they gained access to these networks, and what type of functions they served. Third, respondents were asked about the pace and structure of work and how this interacted with their personal and family lives.

All respondents had college degrees, and half had advanced graduate degrees. Thirty-two of the respondents were women. Nineteen of the respondents were Chinese/Taiwanese, 19 were white, 13 were Indian, 2 were Filipino, and 1 was Vietnamese. Twenty-four of the respondents were U.S. born (including all of the whites); the remainder were foreign born. The average age of the respondents was 36, which approximates the average age of high-skilled workers in Silicon Valley (Alarcon 1999). The respondents worked (or were entrepreneurs) at 39 different firms, representing both larger, well-established organizations and smaller firms or start-ups. However, the majority of the respondents had worked in the past for both established and newer firms, and almost all the respondents had worked for more than one company. The average number of years in the work force was 11.

RESULTS

Job-Hopping: Strategies of Integration and Separation

While respondents viewed Silicon Valley as being more meritocratic than other industries or regions where they had worked, two-thirds of respondents also reported that they had experienced some form of gender or ethnic bias, describing experiences within organizations such as ethnic- or gender-based typecasting, hitting glass walls (job segregation) and ceilings, or being excluded from key old boys’ networks. Among those who reported
facing bias, most said that they used job-hopping as a strategy to circumvent these obstacles.

There were two discernible strategies of job-hopping. The first pattern, which was reported by mostly white women, was a strategy based on a careful search for more egalitarian workplace cultures and bosses. This is exemplified by Susan, who is currently a senior vice president. She describes a situation in her past company where she believed she was being excluded from the most interesting and prestigious projects because her manager was uncomfortable working with women. She says,

The boss, and this should have been a sign to me, was a retired army colonel with eight daughters! He had spent his entire career in what at that point in time was a male-dominated military, and his entire home life he was surrounded by women. . . . So I was a first-time manager, and he could walk and talk and say all the words and say there wasn’t going to be a problem, but six months later, I realized that every really interesting project that would come along, he would never give it to me, so I went to see him again, and I gave him three more months, and then realized, This man is going to die before he gives anything to me. And that’s fine, I’m not going to report him, but I’ll find someone else to work for.

Susan felt that the gender bias of her boss limited her opportunities to be on the most innovative projects, and this was problematic because it would subsequently limit her ability to gain the experience, skills, and visibility she needed for career mobility. Her response is telling because she says she will not “report him,” that is, file a formal complaint, which is the traditional avenue of recourse, but that she will simply find someone else to work for. Faced with what she saw was an insurmountable obstacle, Susan decided to job-hop, to leave the company, and she subsequently achieved significant success in her career in environments that she views as more women friendly.

Another respondent, Mary, talks about how a friend’s continuous job-hopping allowed her to circumvent the glass walls that exist in many companies. From her perspective, women face constraints to lateral mobility within companies, for instance, moving from marketing to design engineering to research and development. This kind of variegated experience is necessary to enter the higher ranks in Silicon Valley. She says that while “the guys move around all the time,” women are “channeled,” less able to move around easily. Given this situation, she notes a friend’s strategy to overcome the glass walls within companies: “[My friend was] moving from this
company to another company, and then moving from this company to here, to broaden her scope, so she’s available for this pool of executive management. She had to have experience here and here and here, and to get that she had to change companies, because she couldn’t move through the walls in her company, but she could move into the arena in a different company. So then she didn’t have to move through the glass walls. So her company-hopping has allowed her I think to advance.” As Mary’s comments suggest, continuous job-hopping is a means by which women can circumvent glass walls within companies, to gain the experience needed to move into executive management.

In a final example of this type of job-hopping, Linda, who is a midlevel manager, job-hopped because she felt excluded by an old boys’ network at her previous company. She says about this company’s environment, “I definitely felt out of the loop. . . . I very much felt that that company was run by an old boys’ network, and you had to be certain kind of old boy, meaning not every guy was included. . . . Women in general were not embraced or sought after, and I saw women attempt to break through that with marginal success, so everybody came to the conclusion that they had to move elsewhere.” The women at this company believed they were excluded from key circles, and consequently, many left the company in a case one could call mass job-hopping. Ironically, the company later folded, which, Linda laughed, seemed like “Justice!” When she switched companies, she looked for a place that had a higher proportion of women in general and within the executive levels, and she eventually ended up at a place that she had “heard” was friendly to women. She says, “A lot of people don’t know that, they just wanted to work for the hottest companies. [My company] was good. . . . They had certain processes to make sure that the careers of certain groups of people were developed.”

Of course one could argue that women could be simply job-hopping from one biased situation to another, but as I think is hinted by the examples, job-hopping is not blindly done. These women did not simply switch from company to company in the hopes of finding a less biased environment but rather engaged in a careful scrutiny of potential companies, which includes soliciting information and advice about which companies are more egalitarian and evaluating the prospective new companies. For example, a manager at a software company mentioned that he knew exactly how many women managers were in his division because a candidate he had interviewed earlier in the day had asked this question.

This conscious strategy of evaluating the gender attitudes of a company is described by Susan, the engineer in the first example, who says,
What I actually think is more important for a woman is shopping for a boss. And I say that, and people laugh, bosses shop for employees, but I mean that very seriously. You need to find a boss who trusts you, who you connect with, who is going to give you opportunities as they come along. . . . I did a significant amount of interviewing, and finally ended up going to work for somebody who more than anyone else has single-handedly been responsible for my having been included in major projects that I worked on that got me to be VP. And that’s what it’s all about. It’s making the connection with people who will give you the opportunity and being comfortable with them as bosses. And it’s true for big companies, start-ups, and anywhere else. And it’s your responsibility for doing it. To really push that person you’re interviewing, understand how comfortable they are, look around their organization, look who they are giving work to and what decisions are being made: Are there women there? Are they getting on good projects? Are they getting promoted? Because that’s what’s important.

Similarly, a midlevel manager who had experienced rapid promotions at her company says,

I think it depends on the company. I think [my company] is the most integrated company I’ve seen in terms of gender in management. There are a fair number of women in significant management positions, and it also has a lot of couples; there are a lot of women in software, which is pretty much an open area for women. People who want to go into engineering should be real careful on where they want to do work. Right now there’s a pretty good blend. There are some places where you run into some pockets where you probably are not going to see a woman manager.

Alexandra, an engineer who was early in her career, noted about her most recent job interview, “This time I was very specific, I learned a lot after I interviewed at [company] and took that job. I mean I think I didn’t ask enough questions that time. In any interview, you think you are going to go in and you are supposed to be answering questions rather than asking them questions. But I learned a lot. So when possible I scan people. I was very specific about what will I be doing, what projects are there, who will I be responsible for, what are my day-to-day responsibilities.” These examples illustrate a strategic form of job-hopping: These white women are seeking integration and mobility into women-friendly companies. Larger studies seem to suggest that technically skilled women are able to achieve this type
of lateral mobility. In an analysis of the hiring practices of a large hi-tech company, Peterson, Saporta, and Seidel (2000) find that referrals are a key predictor to who gets hired and that white women surprisingly faced no disadvantages relative to white men in this regard. In contrast, Asian immigrants faced a disadvantage in hiring specifically because they were less likely to be referred to the job, suggesting that they lacked access to the “right” networks for integration into this large organization. Similarly, in a study of hi-tech start-ups, Baron, Hannan, and Burton’s (1999, 554) research suggests that women “penetrate technology based start-ups through network based hiring,” a finding that they note contrasts with the assumptions of previous studies on gender inequality in work organizations.

As may be foreshadowed by Peterson, Saporta, and Seidel’s (2000) study, Asian immigrants were less likely to use their networks to move into mainstream firms but rather opted to job-hop into co-ethnic-owned start-ups or alternatively engaged in entrepreneurship themselves. This strategy of separation is particularly feasible for Asian immigrants because of the increasing rates of Chinese and Indian entrepreneurship in the late 1990s. Like the white women cited above, Asian immigrants’ job-hopping is at least partially motivated by experiences of bias. Respondents reported that they felt typecast into technical roles rather than viewed as management material. Furthermore, as immigrants, they perceived themselves to be cultural outsiders, excluded from the inner circles and networks in mainstream companies.

Ping, a male, Chinese immigrant engineer who had worked for large, white-majority companies, for example, suggests that immigrants may not have the American culture necessary to move up, saying,

There’s a lot of overseas engineers coming in, [but they are not represented at the top levels, partly because] in order to be able to move up and be able to manage in this company, its not just the technology and the skills but also the culture, you need the culture as well, the communication skills, presentation skills . . . social interaction, all that comes into play. Also, [it] depends on what culture you come from, from people who come from Canada, very little, people from Europe a little, but people coming from Asia, there’s a lot of difference. . . . I guess as you get the higher level, the ones up there are very American.

In the same vein, Joyce, a Chinese immigrant software engineer says that she does think that ethnicity makes a difference at work because “the Chinese cultural background are different, more humble, quiet. . . . We’re not as
aggressive.” From her point of view, this means that “we end up not being recognized by the manager. They know you are not a troublemaker, and so they don’t give the attention, the [pay] raise to us. He always takes advantage. . . . I think most Chinese in San Jose feel the way I do, [the manager] gives white people more attention.” Joyce’s view of the obstacles she faces is characteristic of other Asian immigrant women I spoke to. They did not speak of their gender as an issue but rather viewed their ethnic or immigrant status as the source of their disadvantage.

One of the differences between U.S.-born women’s accounts and Asian immigrants’ accounts (both men’s and women’s) is that the latter report far greater pessimism about finding firms that do not typecast them, in part because this issue is tangled with potential language difficulties or cultural differences. Patterns in large hi-tech companies lend credence to this pessimism. Data obtained by the San Francisco Chronicle (Angwin and Castaneda 1998) on the ethnic breakdown of leading Silicon Valley companies suggests Asians are underrepresented at the managerial level. For example, at Intel, Asians compose 18 percent of the professional workforce but only 8 percent of managers and officials. Whites, in contrast, held 70 percent of professional jobs but 85 percent of managerial and official jobs.

Given Asian immigrants’ perception of technical typecasting in larger firms, respondents say they are drawn to co-ethnic firms or to entrepreneurship, where they are allowed to develop a spectrum of skills. An example of this strategy is that employed by Lei, an engineer from China, who has recently joined as a director in a co-ethnic-run start-up. His previous employment had been in companies where whites predominated. In these companies, he was put solely into technical roles and not into other divisions or into management. Lei explained that usually, “when I put a tech hat on to look for jobs, no problem. [They are] looking for a bag of skill sets, they just see me as a body.” However, when he looks to go beyond this “tech hat,” he usually has difficulties. In comparison, he says about the co-ethnic start-up that he has joined, “I feel very excited because I can contribute on many fronts, not only on the technology side, but product management, marketing, sales.”

In another example, Lin, a Taiwanese immigrant engineer who had been working for an established, large chip manufacturer, was persuaded by his department manager, who was also Chinese, to go with him to a co-ethnic-run start-up. When I ask Lin why he and his boss decided to move to this start-up, he explains that his manager had become frustrated and decided to leave to start his own company, taking most of the Chinese engineers in their department with him because he felt he was “always kicked around by some other guy. I think somehow he felt frustrated so he thought he might as well
start his own company.” When asked why his boss was frustrated, Lin seemed uncomfortable and cautiously answers, “He thinks, he thought [long pause], well in the company people play politics, and he is always the victim or something [laughs uneasily], so he asked us if we want to join him, and some of us decided to.” While it is unspecified why Lin’s boss felt unhappy, his action of leaving and taking only other Chinese engineers suggests that some of his dissatisfaction was related to his experiences as a Chinese immigrant. Similarly, the fact that most of the Chinese engineers agreed to leave with him suggests that they too might have been uncomfortable in that environment (this is reminiscent of the case above, where several women left a company). Lin himself mentions that he and the other Chinese engineers who job-hopped with him were in the technical division of the previous company and that he felt that they would not have had the opportunity to develop any other skills and experiences.

As a last example, Chun also had recently left his job, at a semiconductor firm where he had worked for 10 years, to join a co-ethnic firm. As a senior manager at his past company, he was in charge of a 15-to-20-person research and development department that was almost entirely made up of immigrants. When the director left, he was not promoted, and he felt that he “basically hit my ceiling.” When I ask him if he felt that there was a glass ceiling for him and other Asian immigrants, he says matter-of-factly, “Yeah, of course, that is obvious. . . . Glass ceiling is definitely there. . . . [To succeed] you need to be very, very good; if you are just marginally better, there is one Caucasian and one Chinese, and you are just a little bit better, then chance to be promoted to the position is not good.” However, Chun did not decide to leave because of this. More important was the fact that his entire department had in effect been demoted due to an increase in subcontracting, and he felt that he would soon be told to lay off people who were primarily Asian immigrants. Chun explains that his decision to leave and become vice president of operations at a co-ethnic-owned company was a direct result of the fact that he felt angry that the division with mostly immigrants was being expended and that his efforts to change this were fruitless.

Building Resource-Rich, Gender- and Ethnic-Based Networks

While I have argued thus far that job-hopping in Silicon Valley became a viable strategy by which white women and Asian men and women could negotiate discrimination, I do not suggest that this is a strategy that is available to all groups, or at any time period. What is critical to the ability of these groups to job-hop is their access to resource-rich, gender- and ethnic-
based networks that could challenge the utility of old white boys’ networks. In Silicon Valley, this became a possibility because of the historical convergence of two trends—the growth of Silicon Valley’s hi-tech industry on one hand and the increasing supply of technically trained white women, Asian men, and Asian women on the other. In tandem, this led to the ability of these groups to get a foot in the door of a growing industry, cultivating members in senior positions who became well positioned to help newcomers. In addition, for Asian immigrants, the global nature of the hi-tech industry changed the structure of opportunities because transnational ties became increasingly important.

The origins of Silicon Valley are rooted in the 1930s with the development of microelectronics followed by the growth of the semiconductor industry. However, the current incarnation of the hi-tech industry is a post-1970s phenomenon, first fueled by the development of the market for integrated circuits and microprocessors, bolstered in the 1980s with networking technology, and exploding in the mid 1990s by the Internet boom (Henton 2000; Rogers and Larsen 1984). The exponential and unexpected growth of this industry led to a labor shortage of engineers and other technically trained workers. A report by Joint Venture Silicon Valley (2000) found that the workforce gap in Silicon Valley was 31 to 37 percent of the hi-tech industry demand, while the Computing Technology Industry Association found that 269,000 hi-tech jobs remained unfilled in 2000, costing U.S. businesses some $4.5 billion annually in production loss. Similarly, the National Science Foundation (2000b) projects that between the years 1998 and 2008, science and engineering occupations will increase by 51 percent, or four times the rate of all occupations. Eighty percent of this growth is attributable to computer-related occupations alone.

Clearly, strong growth in the region is good news for those with the right skills because it creates an “employees’ market” where competition over well-trained employees is high. I was reminded of this when, chatting in an elevator with someone on my way up to meet a respondent in his office, I was suddenly asked, “You’re not going to try and steal [respondent] away from us, are you?” As I assured him that was not my intent, he jovially responded, “Good good!” and then immediately asked if I was considering joining their company. Indeed, those whom I spoke with who were in charge of hiring confirmed the difficulties of finding qualified candidates. When I asked an engineering manager in charge of hiring at a well-established company about the labor shortage, he immediately exclaimed, “Oh! It’s really hard. It’s a nightmare to hire people. In the last two years, information technology has just exploded, and there is fundamentally not enough people in the U.S., people are not interested [in learning the skills].”
Given this labor market context, employers would find it difficult to satisfy any “tastes” for discrimination by excluding qualified women and/or immigrant engineers. This perspective is shared by respondents. A director at a company that manufactures chip-making equipment notes that the labor shortage impedes employers’ ability to discriminate. She remarks, “I think the nature of hi-tech is that because the demand for resources is so high pressured, it could not afford to eliminate or constrain one element of its work force. It just couldn’t afford to do it; it has been growing too rapidly. I mean [my company] has grown tremendously just in the last 15 years, and if they tried to do that, constraining one element, they couldn’t do it.”

At the same time that the hi-tech expansion resulted in increasing labor shortages, the supply of technically trained women and Asian immigrants also grew. Science and engineering degrees granted to women increased from the 1970s, encouraged by the civil rights and women’s liberation movements. Table 1 illustrates women’s increasing representation in earned bachelor’s degrees in math, computer science, and engineering. Only 65 women earned engineering degrees in 1954, compared to 10,950 (17 percent of all engineering degrees) in 1995. In addition, women have represented a significant share of those receiving degrees in mathematics and computer science, degrees that are central to hi-tech. Both these trends meant that women were prepared to take the opportunities in Silicon Valley when they emerged.

Furthermore, the implementation of affirmative action programs in the 1970s and 1980s encouraged companies to diversify their workforces. Respondents noted that during this time, companies made active attempts to recruit women engineers in particular. A white woman engineer with a long-term perspective on Silicon Valley remarked, “Starting in the late 70s/early 80s, corporate America was highly motivated to support affirmative action efforts. . . . [They went by] demographics, during the 80s, late 70s.

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**TABLE 1: Women’s Share (in Percentages) of Bachelor’s Degrees in Engineering, Mathematics, and Computer Science: 1954, 1985, 1990, and 1995**

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Engineering</td>
<td>0.00</td>
<td>15(11,246)</td>
<td>15(9,973)</td>
<td>17(10,950)</td>
</tr>
<tr>
<td>Mathematics</td>
<td>33 (1,368)</td>
<td>46 (7,094)</td>
<td>46 (6,811)</td>
<td>47 (6,491)</td>
</tr>
<tr>
<td>Computer sciences</td>
<td>NA</td>
<td>37 (14,431)</td>
<td>30 (8,374)</td>
<td>28.5 (7,063)</td>
</tr>
</tbody>
</table>

SOURCE: Data adapted from Streeter (1993, Table 2) and National Science Foundation (2000, 28).
People were antsy. . . . Those were the days when they were really taking care of their employees. The joke was that they had everyone in there except white guys between the ages of 25 and 40. They were looking at women as a group, minorities as a group, people over 40 as a group. It really expanded the nonmainstream people they had.”

National figures seem to confirm that women are increasingly represented at the managerial level because of affirmative action legislation. DiTomaso and Smith (1996, 90) note that from 1975 to 1993, women doubled their representation as officials and managers from 14.2 percent to 29.9 percent, according to data from the Equal Employment Opportunity Commission. They find that nonwhite representation also increased during this time period, from 5.4 percent to 10.8 percent.

The historical convergence that allowed the entry of women into hi-tech at its origins was critical, allowing women to get a foot in the door of an emerging industry and eventually entering senior positions. Mary, a white engineer in senior management, compares her experience in the construction industry with the hi-tech industry.

Where [Silicon Valley is] unique is that they are a very young industry. . . . The number of women in the Silicon industry is extraordinarily higher than the traditional construction engineering. . . . The Silicon industry came around and it was brand new, and it had been acceptable for women for close to 100 years, or marginally acceptable at least to major in mathematics. . . . The programming industry has a very mathematical side, a lot of math, a lot of logic, so there was a large pool, or a larger pool of women to draw from. . . . So the Silicon industry had a lot of women, and since they were already there, a lot of senior people who were available to take on projects were women, so when people started thinking about who am I going to hire, who am I going to hire, the fact that it was male or female didn’t come into it at all.

According to Mary, hi-tech “works to women’s advantage because the demand exceeds the supply, and that’s a good thing for women. . . . We’ve been fortunate to grow with an industry that has always needed people, needed more people than it could find, which was true 10, 20 years ago.”

Changes in immigration policies for Asians also coincided with the growth of hi-tech, leading to Asians’ presence at the origins of the hi-tech expansion and allowing for a steady increase in their numbers through the present. First, the contours of Asian immigration were fundamentally changed by the 1990 Immigration Act, which increased threefold the number of immigrants admitted through skills, prioritizing workers with
extraordinary abilities, professionals with advanced degrees, and skilled workers (Bagchi 2001). The 1990 restructuring of immigration categories fostered the migration of hi-tech, high-skilled workers. Of all scientists and engineers admitted in these visa categories in 1993, almost 58 percent were from Asian countries, with the People’s Republic of China contributing 20 percent and India another 17 percent (Streeter 1993).

Second, the increase on the caps for H-1B temporary worker visas has directly shaped Asian presence in Silicon Valley. The H-1B visa program is used heavily by hi-tech firms: Half of the petitions for H-1Bs are for computer-related occupations (U.S. Immigration and Naturalization Service 2000), and about a quarter of the top H-1B-using companies are in California (Lowell 2000). The third channel by which Asian scientists and engineers enter the United States is student visas (F-1). As Table 2 shows, Asians represent a sizable percentage of those earning bachelor’s, master’s, and doctoral degrees in the field of science and engineering. “Nonresident alien” refers to those without U.S. citizenship or permanent residency; Asians represent 73 percent of this category (Hill 1997). Students may remain in the United States after graduation since F-1 visas can be converted to H-1B visas with employer sponsorship.

Finally, a fourth channel of immigration is worth noting in relation to the migration of skilled women. In a study of immigration patterns of professionals using Immigration and Naturalization Service data, Bagchi (2001) finds that professional women immigrants are much more likely to come through spousal admissions than men immigrants with the same qualifications, estimating that between 69 and 77 percent of women doctors, scientists, and engineers enter the United States through spousal sponsorship rather than employer sponsorship.

The result of these converging trends is a critical mass of technically skilled, U.S.-born women and Asian immigrants at both senior and junior levels of companies, which in turn enabled the formation of resource-rich,
gender- and ethnic-based networks that functioned to facilitate job- 
hopping. However, as the following examples of a gender-based network 
and an ethnic-based network show, the resources of these networks chan- 
eled the groups differently, at least in part because of a change in the struc- 
ture of opportunities afforded to Asian immigrants in the globalized hi-tech 
industry.

My first example is a network rooted in the Silicon Valley chapter of the 
Society of Women Engineers (SWE). This nationwide organization grew 
from 1,000 members in 1970 to more than 15,000 members in 2000 (repre- 
senting about one-tenth of women engineers in the nation). The Silicon Val- 
ley chapter is active, hosting a variety of events ranging from social net- 
working get-togethers to career-related training sessions. Based on 
observations of the functions I attended, this network appears to be primar- 
ily composed of white women, with a few women of other races who are 
U.S. born. Asian immigrant women were not a noticeable presence. This is 
likely to be attributable more to Asian immigrant women’s reports that they 
“cannot melt in” with “Americans” because of language and cultural differ- 
ences than to any racially exclusionary processes of SWE.

An underlying theme of the meetings is the importance of building net- 
works to share advice, information, and referrals among women engineers. 
For example, at the close of one meeting, the organizer told the audience, 
“You’ve heard the backgrounds of the people here; maybe there’s someone 
who can help you with someone, so network and establish your chain!”

Members viewed these networks as important because they believed that 
women in Silicon Valley are well positioned throughout the region and sub- 
sequently have valuable resources to share. One member, Gail, remarks 
about the information access of women engineers: “A good example of an 
old girls’ network is the Society for Women Engineers. . . . If you look 
within the political structure of SWE, there are definitely old, established 
networks where no matter what was going on in a management and organi- 
zation, people in the network had the information about what was going on, 
down to the significant amount of details, they know what’s going on.” The 
presence of “old girls’ networks” functions to aid junior-level women, shar- 
ing resources cross-rank. Another member of SWE who is a senior-level 
manager talks about this relationship: “There are women all over the Valley 
and in every company, so these women supply information, and when they 
know you and what you are doing, they’ll think of you when an opportunity 
comes up; they’ll tell you informally, maybe because they worked with you 
on different projects where they saw your management skills. So getting to 
know who they are and building a relationship [is important].” Gender- 
based networks thus reflect a conscious strategy, developed from the
awareness that the current labor market context provides a critical opportunity. This is described by Dee, a senior-level member of SWE, who says,

My observation is there is a shortage of ready labor, but I think we have to have a long-term perspective. I think we have to have power in numbers, now when the times are good. Have you noticed how much kinder people are when there is plenty, and then how they get a little stingy when there’s not as much? In order for us to sustain, now is the time for us to be establishing our beachhead. . . . I believe now is the time we have to establish the kind of experiences we need to progress, making sure people get the breadth of experience, the breadth of fields, the breadth of opportunities. . . . I believe that at some point, we’re going to go through the cycle, and if we’re not ready for it, then shame on us.

The creation of gender-based networks, and the sharing of resources within them, is facilitated by the presence of an ethic of mentoring. Whether in the formal meetings of the SWE, where everyone is exhorted, “If you are a manager, you can be a mentor,” or in more informal associations, women reported freely seeking and offering “backstage” information about which places or people to avoid, how to deal with projects, and how to find other job opportunities. This ethic is rooted in the experiences of women as minorities in engineering and in their belief that they share similar obstacles.

At a function that I attended designed to address the issues of women managers, a speaker encouraged members to help other women, saying that they definitely had the power to make a difference.

I’m going to tell you my experience. I was in an organization with 800 engineers, and I hired about 250 engineers last year. [When I was hiring] for the first seven weeks, I saw not one woman that my staffing team had brought in, and I was part of a company that was known to be a great place to work. I ran the organization! And yet these women were not being brought in. . . . I still believe that there is a tendency to bring in people who are like you. My staffing organization, which I hadn’t hired, were all white male, and they presented me with all, and I didn’t say most, I said what, all white males. So I said, excuse me, I believe there are about 15 percent of women out there, and I would like to see them Thursday morning.
This ethic of helping other women is present in respondents’ accounts as well, where women make comments such as, “I like the fact that I am helping other women engineers get jobs, so I try to share my experiences, or refer them to people I know at some companies, and it makes me feel good I guess.”

In a sense, the mentoring that women engineers consciously engage in is what male engineers may take for granted through processes of what Kanter (1977) called “homosocial reproduction.” This is reflected in the description of Angie, a senior-level engineer, who talks about the informal process by which she was mentored and then became a mentor. “There were several projects I was very successful on; the majority was when I worked for a woman, and she and I had very similar backgrounds—both our fathers were in the military and so on—and we had a common foundation. We worked very well together, not that we always came up with the same answer, but we had a common understanding. . . . She thought of me [because she was three years my senior and therefore a step up] whenever she had to get a team together; she recounted, ‘the first person I think of is you.’ ” When I asked her if she tried, in turn, to mentor other women she said,

Yes, I try to be available to let them understand why things are the way they are. I was very surprised when I left [my last company]; one of the senior women in my client’s organization . . . pulled me aside and said that she really appreciated the strong mentoring I’d given her. She credited the fact that she was not still just an engineer as some of the people who came in with her class were, with the fact that there was somebody put her name forward. . . . [I helped] her in the sense that I would say, “Hey, I put your name in for this, and if you want to talk about it we will.” If she got into a tight spot we’d talk about it.

This type of informal mentoring that Angie describes can be understood as mobility via a sponsor model, a model that has typically excluded women.

If gender-based networks functioned through the “beachhead effect” created by senior members who share an ethic of mentoring, the networks of Asian men and Asian women immigrants tapped into a different structure of opportunities predicated by the groups’ increasing rates of entrepreneurship and access to venture capital. The example that follows of an immigrant network of alumni from the Indian Institute of Technology (IIT) shows that Indian immigrants had opportunities unlike those of white women.

The IITs are a string of prestigious technology institutes in India, whose alumni have immigrated to the United States in large numbers during the
post-1965 era. IIT-Mumbai (Bombay) has a particularly strong record of sending graduates abroad. In one study of IIT-Mumbai alumni, more than 60 percent of the top quartile of electrical engineering graduates of 1973 to 1977 immigrated (Sukhatme 1987). Even as India’s software industry grows, IIT-Mumbai continues to send graduates abroad: In 1998, about 30 percent of the graduating class left for the United States (Rajghatta 1999). The IITs have become a well-established name in Silicon Valley because of their rigorous entrance exam, and perhaps more important, because so many of their graduates in Silicon Valley have spawned successful start-ups.

The networks formed have yielded advantages to their members, as illustrated by the following story of Anil, who decided to come into the region in the 1980s. When he came, he first contacted two other graduates whom he had kept in touch with who had moved to Silicon Valley in the 1970s. They immediately sent him a long list of job opportunities, furnished by the network of IIT graduates they had in Silicon Valley, and he quickly got a job at a company where another IIT graduate worked. He and his family also easily transitioned into Silicon Valley because of the personal aid given to him by the IIT network. A few years later, as venture funding became more accessible to Indians in general and to IIT graduates in particular because of the growing prestige of their school, he and his friend became cofounders of their own start-up that became quite successful. They have since started other endeavors with other alumni and co-ethnics and acted as investors in other Indian-run start-ups.

Alumni from IIT share the mentoring ethic of SWE members, saying that they are committed to helping younger graduates, and see themselves as mentors because they view themselves as a “successful group of people who have grown in the valley and in a sense become influential in a lot of ways”; “we know what it took to get there, and we realize that we need to give back.” Formalized networking meetings have brought in speakers who lecture on issues such as strategies in securing venture funding or developing a strong business plan. These meetings, which are common among a number of ethnic-based networks, are also designed to match investors with entrepreneurs with high-skilled talent.

The effect of these networks, which work to foster the growing reputation of immigrant entrepreneurs, is expressed by Vijaya, an IIT-Mumbai graduate, who was in the process of starting her own firm when we spoke. She says, “It’s very easy right nowadays to find venture capital, for Indians anyway, because of networks; it really does help. Just talking to people, it’s very easy to find, especially in the Bay Area, at least to get your story heard. I mean, I’ve had lots of rejections from venture capitalists, not to say you
know, but I don’t take it very seriously [laugh]. . . . So because you know somebody who has been through the process who knows somebody, or whatever, it’s very easy.” She also remarks that at a time when one of the greatest challenges of forming a start-up was labor shortage, she was able to tap into her alumni and co-ethnic networks to quickly find the necessary engineers.

Mashu, a repeat entrepreneur who has been in Silicon Valley since the 1970s, agrees with Vijaya’s perception of Indians’ access to venture capital but talks about this within a historical perspective. He says,

In terms of funding kinds of stuff, it really has become significantly a lot easier. I remember in the ’86 timeframe, we were looking for second funding for [his company], it was hard. It was hard, let’s go back. I think it’s easier for two reasons. It’s easier because now there are so many success stories, and also now the venture capitalists have more money, but there are so many success stories that this is now a well-understood model. . . . And second, then about the immigrant issue, again same issue, there are enough success models, that I don’t think there is really any difference between immigrants and nonimmigrants trying to get money, which used to be the case 15 to 20 years ago.

As is suggested by these two comments, the opportunities for immigrants to start their own firms or to join co-ethnic firms increased in the 1990s.

The IIT case is not unique. Chinese immigrant respondents also reported using alumni networks to their advantage. Respondents’ accounts are supported by a recent survey of 2,272 members of ethnic Chinese or Indian networking associations, which found that almost 15 percent of immigrants from China, 34 percent from Taiwan, and 43 percent from India were involved full-time in founding or running a start-up, with an additional 16 percent of each group involved part-time in these activities. Even more striking, when respondents were asked how many of their firms’ founders were co-ethnics, only 18 percent from China, 20 percent from Taiwan, and 11 percent from India said none were co-ethnics. While sampling the membership of ethnic networks overestimates those engaged in co-ethnic businesses, the data remain suggestive.

The numbers of Asian immigrants involved in running or being employed in co-ethnic start-ups is directly linked to the global context of the hi-tech industry, where increasingly, the expansion and survival of Silicon Valley is reliant on foreign labor, foreign subcontractors, foreign consumers, and foreign investment (Saxenian 1999). This global context means that transnational ties and cultural know-how become valuable, for
example, to make subcontracting agreements with companies in India or marketing agreements with companies in China, to recruit high-skilled labor from foreign institutions, or to seek foreign investment. Saxenian (1999) documents the extensive ties between immigrants in Silicon Valley and in the hi-tech regions of Taiwan, China, and India, arguing that the hardware industries of the former two countries and the software industry of the latter reflect the work of transnational relationships.

In this scenario, Asian immigrants’ social capital from their homeland, as well as reconstituted ethnic ties in Silicon Valley, has become a convertible commodity. Put differently, immigrants are increasingly able to import forms of social and cultural capital from their homelands. This is different from the situation in the past, where immigrants have typically been unable to transport these forms of capital: it was either useless, as in the ubiquitous anecdotes of professionals who are now laborers in Chinatowns, for instance, or limited, as in the case of social capital within the confines of ethnic economies. This is a potentially significant consequence of the global nature of industries like hi-tech because it signals the ability of some Asian immigrants to reach outside the domestic structure of ethnic and race relations to access resources. The change in the structure of opportunities, that is, the increasing convertibility of transnational and co-ethnic ties, along with increased access to funding has made job-hopping into co-ethnic-owned firms or starting one’s own firm a viable option that did not exist for the white women I interviewed. In this sense, the type of network resources each group had access to channeled their job-hopping.

CONCLUSION

This article compared the experiences of U.S.-born white women, Asian women, and Asian men engineers in Silicon Valley. The case study of Silicon Valley contributes to a more complete understanding of gender and ethnic inequality in organizations by underscoring the role that region, group, and historically specific contexts play in mediating mechanisms of discrimination and by examining how these contexts potentially enable traditionally disadvantaged groups to contest organizational bias.

Studies of work organizations have focused on gender and ethnic type-casting, segregation within organizations, and lack of access to networks and role models as key factors in explaining ethnic and gender inequality. While the respondents in this study confirmed the presence of these factors, they also indicated that they were able to employ successful strategies to counter discrimination. Simply put, when faced with bias in their
workplace, they reported job-hopping into firms that they viewed as more egalitarian, and they reported having access to networks that facilitated this process.

The argument here is not that all women and ethnic minority men can use this strategy in any situation (or even that all women and ethnic minority men in Silicon Valley could do so). Rather, this case study suggests the pivotal role that contexts play in providing avenues for resistance. Three contexts were emphasized: the region’s high-velocity labor market that made job-hopping normative, and the historical and group-specific contexts of Silicon Valley that enabled white women, Asian men, and Asian women to build and tap into resource-rich, gender- and ethnic-based networks that could challenge the old white boys’ networks. The relevance of these contexts was clearly illustrated in the example of the old girls’ network. The accounts of these members richly explain why quantitative studies have found that in contrast to expectations, white women in hi-tech are tapped into the “right networks” in mainstream firms (Baron, Hannan, and Burton 1999; Peterson, Saporta, and Seidel 2000).

This case study subsequently highlights the importance of studying the other side of discrimination. Research on work organizations too often focuses on mechanisms of discrimination without full consideration of what strategies may be employed to combat these mechanisms and what conditions are necessary for these strategies to have effect. This is clearly an incomplete picture, depicting workers as helpless against inexorable structures. By looking at the strategies of white women, Asian men, and Asian women in challenging bias, this study gives appropriate weight to both agency and the conditions that make agency possible, highlighting the interplay between the two. In relation, the two networks presented hint at the role of identities and ethics in facilitating the sharing and allocation of resources within networks. Members in both networks described an identity based on a disadvantaged status, coupled with a mentoring ethic. This meant that access to the most valuable network resources was not just the province of senior members but rather was shared with those who stand to benefit the most, creating an important ladder effect. In this sense, Silicon Valley may be meritocratic, as the public discourse is fond of suggesting, but meritocracy, when it exists, does not stem from the culture of the region but rather exists as an achieved outcome of the work of groups.

Finally, the comparison of white women with Asian immigrant women reflects the interaction of gender and ethnicity in shaping divergent (but not necessarily unequal) trajectories. While I noted earlier that Asian immigrant women spoke of their experiences in primarily ethnic or immigrant terms and similarly white women viewed their careers as shaped by gender
rather than race, it is clear that each of these groups’ outcomes were shaped by both statuses. For white women, the ability to locate firms they viewed as egalitarian was partly shaped by the fact that race or immigrant status was not a problematic issue. In addition, the social networks they reported clearly included white male engineers, indicating that they had access to some mixed-gender but primarily single-race networks. This is not to suggest that Asian immigrant women faced a double disadvantage. Instead, their experiences were filtered through and buffered by the Asian immigrant networks they were a part of, and while it is reasonably safe to assume that there are gender differences in access to these network resources, these networks still offered Asian immigrant women a different but no less effective set of resources.

NOTES

1. There have been challenges to the glass ceiling hypothesis. Morgan (1995) has suggested that what had been seen as a glass ceiling effect can be understood as a cohort effect, with younger cohorts of women engineers experiencing negligible gender disadvantage. More recently, Prokos and Padaviv (2005) found a consistent gender pay gap (regardless of cohort) but no evidence of a glass ceiling.

2. Hyde (1997) estimates that the average job duration among hi-tech professionals is two years; Joint Venture Silicon Valley (2000) finds that the regional turnover rate was twice the national average; and Carnoy, Castells, and Benner (1997) find that human resources managers in hi-tech companies report annual turnover rates ranging from 15 percent to 25 percent.

3. For example, Intel produced its first microprocessor in 1971, while Apple Computer was formed in 1976. Cisco Systems, a leader in networking technology, was founded in 1984, and the first version of Netscape Communications emerged in 1994.

4. H-1B visas allow entrance through guest worker status for a maximum of six years (two three-year extensions). While a cap of 65,000 was instituted in 1990, annual numbers have exceeded this, with 137,000 workers admitted in 1999 alone. In response to lobbying by the hi-tech industry, Congress passed legislation in 1999 that increased the annual cap to 115,000 for three years.

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