2006-1131: CHALLENGES TO DIVERSITY: A CASE STUDY OF ASIAN INDIAN SCIENTISTS/ENGINEERS

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Challenges to Diversity: 
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Abstract

I present findings from a qualitative-quantitative study, funded by the National Science Foundation (SES-0136467), on the situation and experiences of foreign-born scientists and engineers from India in the United States. I focus on the extent to which they are professionally successful and/or face institutional barriers with respect to reward, recognition, and promotion while functioning in science and engineering organizations. The paper is based on in-depth interviews with 82 Asian Indian scientists and engineers working in industrial companies, national laboratories, and academic institutions in the United States and 38 Indian scientists and engineers who worked in the United States for some time and then moved back to India.

Introduction

Public and private organizations in the United States have made enormous strides since Civil Rights activists first demanded parity in educational and career opportunities for racial/ethnic minorities some 40 years ago. Changes to the law and organizational attitudes have opened the door to many people who a few decades ago would have found it not just locked but barred. Nevertheless, change has not come as quickly or as completely as was hoped and few would deny that in the new millennium racial/ethnic minorities are still underrepresented when it comes to attaining high-level, decision-making positions in public and private organizations as compared to Whites. Even when racial/ethnic minorities are overrepresented in professional occupations, such as Asian Indians who make up less than 1% of the U.S. population, but constitute 58% of management, professional, and related occupations, they rarely hold positions in the upper echelons of management or administration. Despite their being heavily concentrated in professional occupations (74%), they hold only 17% of management positions.\textsuperscript{13}

This paper examines the issues surrounding the career mobility of Asian Indians in achieving high-level decision-making positions. It is based on in-depth interviews with 120 Asian Indian scientists and engineers conducted between 2002 and 2004. These included 82 Asian Indian scientists and engineers working in the public and private sectors inside the United States. The sample includes 26 respondents from 24 academic institutions, 39 respondents from four high-technology industrial companies, and 17 respondents from two national laboratories. In addition, 38 interviews were conducted with Asian Indian scientists and engineers who studied and worked in the United States for some time and then moved back to India to work in three academic institutions and one research laboratory. This discussion will focus on the following question: What challenges do managers/administrators face in placing Asian Indian scientists and engineers in decision-making roles within their organizations? Other aspects of the study are reported in the book titled Harbingers of Global Change: India’s Techno-Immigrants in the United States, scheduled for printing at the end of March, 2006.\textsuperscript{15}

Asian Indians were selected for the study for two primary reasons. First, they are increasingly present in the science and engineering (S&E) workforce of the United States. In 1999, out of 1.5 million foreign-born S&E degree-holders in the United States, 14% were from India, followed
by 10% from China, and 5% each from Germany, Philippines, United Kingdom, Taiwan, and Canada. Second, compared with other minorities in the United States such as African-Americans, Hispanics, and American Indians/Alaska Natives, Asian Indians appear to have made vast strides in education and employment. For instance, Asian Indians enjoy a broad lead over the total U.S. population in terms of the percentage with a bachelor’s degree or better (61% compared with 24%, a difference of 37 percentage points). Moreover, among that 61%, 21% of Asian Indians have a master’s degree, and 5% hold a doctorate degree, compared with 6% and 1% of the U.S. population, respectively. Consequently, popular arguments for the lack of advancement of minorities in S&E occupations such as lower scores in science and/or mathematics and bias in early socialization, likely do not apply to Asian Indians.

Immigration Background

Although the first Asian Indian immigration to America dates back to 1790, prior to 1965 most immigrants in the United States were from Europe, with the exception of immigrants from Mexico. Immigration laws such as the Chinese Exclusion Act of 1882, the Gentlemen Agreement with Japan in 1907, the Barred Zone Act of 1917, the Oriental Exclusion Act of 1924, and the National Origins Act of 1924 barred Asians from entering the country. During World War II, the United States began to change its immigration policy for Asian countries that were on the Allied side. The Immigration and Nationality Act of 1952 liberalized immigration regulations for Asians and set up a quota of 100 for most Asian countries, with a ceiling of 2,000 total per year. To show the world in the post World War II era that the United States was the land of equal opportunity in contrast to the communist countries such as the Soviet Union, the 1965 Immigration Act abolished the restrictive national origins system in favor of a preference system. Priority was now given to family reunification, refugees, and persons in possession of special skills. The 1965 Act allowed 20,000 immigrants per country per year, not to exceed the total of 270,000 per year. It gave preference to professionals, including scientists, artists of exceptional ability (maximum 10%), and skilled and unskilled workers in occupations for which labor is in short supply (maximum of 10%). To deal with the increasing demand for highly skilled labor for the U.S. economy, the 1990 Immigration Act strengthened the preference for skilled labor by placing an annual numerical ceiling of 65,000 on admissions of temporary specialty occupation workers (H1-B visas). The American Competitiveness and Workforce Improvement Act of 1998 raised the ceiling on H1-B visas to foreign skilled workers from 65,000 per year to 115,000 each for 1999 and 2000. The American Competitiveness in the 21st Century Act of 2000 further increased the limit on H1-B visas to 195,000 each for 2001, 2002, and 2003. With the economic slowdown of the American economy, H1-B visas were cut back to 65,000 per year.

Since 1965, the Asian Indian population in the United States has increased steadily. The 1980 U.S. Census recorded 387,223 Asian Indians while the 1990 census recorded 815,447; an increase of 125.6%. According to the U.S. 2000 Census, of the total population, there are 1.9 million Asian Indians (1.7 million who reported Asian Indian alone + 0.2 million who reported Asian Indian in combination with one or more other races). Sixty-seven percent of Asian Indian males and 65% of Asian Indian females 18 years and older are foreign-born. In 1990, Asian Indians became the fastest growing group among Asian populations. The Asian Indian population is now the third largest Asian American group, after Chinese and Filipinos; 10 years ago, Asian Indians were ranked as the fourth largest Asian group. The catalyst behind the growth
of the Asian Indian population appears to be: (i) students who have come to the U.S. to obtain or finish their graduate education in S&E finding work and making their stay permanent; and (ii) H-1B visa holders in the high technology sector, applying for and receiving permanent residency.

Occupational Status

Aggregate economic data suggests that Asian Indian scientists and engineers have earnings comparable to Whites and higher than other minority groups. In 1999, for all scientists and engineers, the median salaries by racial and ethnic group were $67,000 for Asian Indian, $61,000 for White, $55,000 for Hispanic, and $53,000 for African-American scientists and engineers (non-public data released by the National Science Foundation to Varma). When asked whether they are paid the same, better, or less than their colleagues, the majority of Asian Indian scientists and engineers (57%) said that they receive the same pay as their colleagues, some (15%) were unsure but believed it to be more or less the same, and some (9%) said they were paid better than their colleagues. Very few (15%) reported that they were paid less and a small number (4%) had taken actions to get their salaries corrected. Since Asian Indian scientists and engineers seem to be performing as well as Whites and outperforming other minorities on the pay scale, it suggests that they have won the battle against racial discrimination in S&E employment; however, salary is not the only measure of equality.

When asked whether their career advancement had taken the same, more, or less time when compared with their White colleagues, Asian Indian scientists and engineers indicated dissatisfaction with their limited career development opportunities. This question did not apply to 28% of the interview respondents because they had not been in their current organizations long enough to advance. In situations where promotions were an issue, 34% of respondents believed that it had taken more time for them to be promoted than it did their colleagues with similar qualifications and experience. Another 33% of respondents reported their promotions took the same amount of time as for their colleagues. Only 5% reported to have taken less time earning their promotions.

Once Asian Indians have been recruited to work in S&E organizations, the differences with the dominant Whites become important. Cultural differences (e.g., do they act like us?), color-based differences (e.g., do they look like us?), national differences (e.g., do they fill our roles?), communication differences (e.g., do they talk like us?), social differences (e.g., do they socialize like us?), and ability differences (e.g., do they have the same qualifications as us?), and so on, impede the advancement of Asian Indians in S&E organizations.15 Interestingly, these differences work at both levels. At the managerial/administrative level, such differences influence their evaluations in the advancement of Asian Indians from the technical to the managerial ladder. At the workforce level, the same differences influence Asian Indian scientists and engineers not to seek managerial/administrative positions.

Despite their status as highly paid professionals, Asian Indian scientists and engineers are not visible in high-ranking positions in most sectors. In private, for-profit businesses, Asian Indian scientists and engineers are rarely engaged primarily or secondarily in management. Similarly, in national laboratories, even fewer Asian Indian scientists and engineers as compared to Whites have management as their primary or secondary responsibility. In academic institutions, it is rare
Asian Indian scientists and engineers explained the challenges faced by managers/administrators in placing Asian Indians in decision-making roles within their organizations in terms of structural/institutional and social/cultural factors. Structural/institutional factors include prejudice or bias against Asian Indians, lack of effort to understand Asian Indians, tendency to hire people who are similar to the dominant group, and so on. Social/cultural factors include a limited pool of qualified Asian Indian candidates due to lack of communication skills, less aggressive behavior for leadership roles, and so on.

As table 1 shows, over 73% of the respondents admitted there were serious challenges in hiring Asian Indians in top decision making positions. Among them, 60% gave structural factors as the reason, whereas 40% attributed these challenges to social factors. Only 27% claimed there were no challenges in hiring Asian Indians in managerial positions. The aggregate responses did not show any variation across gender. In academia, however, a lower percentage (65%) of respondents said that there were challenges; over 40% of male respondents said there were no challenges. Among female respondents, everyone in academia agreed that there were challenges in hiring Asian Indians for decision-making positions. Less than 50% of all respondents attributed these challenges to structural factors. In contrast, among respondents working for national laboratories, only 3 out of 17 (19%) said that there were no challenges, whereas 81% said there were structural and social factors making it difficult to promote Asian Indians to top positions. Over 50% of respondents attributed these challenges to structural factors. The aggregate responses did not show any variation on those who were working in industry and those who returned to India after working in the United States.

Table 1. Challenges Facing Managers to Hire Asian Indian Scientists and Engineers in Top Decision-Making Positions.

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Industry</th>
<th>Academia</th>
<th>National lab</th>
<th>Returned to India</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>F</td>
<td>M</td>
<td>F</td>
<td></td>
</tr>
<tr>
<td>Due to Structural Factors</td>
<td>43</td>
<td>44</td>
<td>32</td>
<td>75</td>
<td>43</td>
</tr>
<tr>
<td>Due to Social Factors</td>
<td>30</td>
<td>33</td>
<td>27</td>
<td>25</td>
<td>30</td>
</tr>
<tr>
<td>No Challenges</td>
<td>27</td>
<td>22</td>
<td>41</td>
<td>0</td>
<td>27</td>
</tr>
<tr>
<td>Number of Respondents</td>
<td>30</td>
<td>9</td>
<td>22</td>
<td>4</td>
<td>120</td>
</tr>
</tbody>
</table>

It should be noted that less than one-third of Asian Indians believed that there were no challenges to placing Asian Indians or other minority candidates in decision-making positions (table 1). A large majority of these respondents, however, had not gone through the promotion process in their organizations at the time of the interview. Some respondents qualified their answers by saying that managers/administrators are obligated to disregard race/ethnicity and gender to choose the most qualified person for the job. As an academia respondent said, “I don’t think any
chair or any administrator ought to be making decisions based on race or ethnicity alone. If a
candidate has the right skill set and qualifications and abilities, he or she should be provided
every opportunity… And, as long as a chair has an open mind, I don’t see any issues at all.”
Another respondent working in a national laboratory echoed that sentiment: “I don’t think they
have any more challenges, other than getting along and looking out for everybody’s welfare in
the unit.” Other respondents believed that challenges did not exist because the companies or
organizations they worked for had broad representation. “Our lab at this point is fairly diverse,
you have people from all kinds of backgrounds and different ethnicities,” said a national
laboratory respondent. Another working in industry echoed that sentiment, “In our company we
are already diversified. I have never seen any other company that is as diversified as our
company.” Some respondents compared the workforce diversity in India and the United States
and noted that companies in the United States are very diverse when compared to those in India.
An academia respondent believed that the issue of discrimination in the United States has been
exaggerated. He said: “I have seen a lot more discrimination in India and elsewhere, but people
do not complain. The system here [the U.S.] is a lot fairer, and still people complain.”

Structural/Institutional Challenges

A large majority of respondents (43%) identified structural or institutional challenges in hiring
Asian Indians in top decision making positions (table 1). They pointed out lack of effort to
understand leadership abilities of potential Asian Indian candidates, prejudice or bias against
Asian Indians by managers, tendency to promote people who are similar to managers, keeping
Asian Indians outside social network, problems in security clearance, and so forth.

Scholarly literature has come to view a professional manager as embodying three crucial skills:
(1) technical aptitude, such as data management and planning; (2) people skills, such as
understanding human behavior and effectively interacting with and managing workers; and (3)
conceptual talent, such as defining basic long-term organizational goals and providing effective
leadership. Asian Americans often are stereotyped as lacking these leadership
qualities. A successful manager will be able to model and enforce both programmed
decisions (those learned in advance and formalized in organization rules, policies, and
procedures), and non-programmed decisions (matters that are unpredictable and therefore cannot
be addressed in rules, policies, and procedures).

Typically, Asian Indians are characterized as having better technical skills than their American
counterparts; however, they are not considered leadership material because it is assumed that
they cannot perform in impromptu situations, make quick decisions that encompass a degree of
risk, or practice diplomacy with employees. As a result, those Asian Indian scientists and
engineers who do seek management or administrative positions have to work very hard to fight
the pre-conceived notions that they cannot lead American people and organizations successfully.
A respondent who returned to India believed that stereotypes about superiority of American
culture and inferiority of non-American cultures are prevalent in the United States. He said:
“American culture is seen as outgoing, extrovert. [Asian] Indian culture is seen as subdued and
submissive.” Another respondent working in an industrial company noted that “[Asian] Indians
are perceived to be technologists, scientists, etc. … But, somehow they are not perceived as
managers. And that automatically kind of sets things rolling.” Similarly, a respondent working in
a national laboratory noticed that “If you are an [Asian] Indian, it is assumed that you have a
better technical skills. So, it acts in a beneficial way. But, when it comes to be leaders, it is assumed that you have poor managerial skills. So, it acts in a negative way.”

Some respondents were more direct in pointing out prejudice and bias. They felt that the organizational culture in the United States is predominantly a White culture and that only White Americans are believed to have management capabilities. According to the respondents, people in position of power are not really interested in having workforce diversity, but they are forced to by law. Consequently, they say “the right words” about wanting diversity, but do not follow through. A respondent who left the United States to return to India said: “Most of the top management was White American … It was just an ‘old boys’ kind of thing, at least when I was there.” A respondent from a national laboratory declared, “I have seen extreme bias in people’s minds, judgments which are made before they even see a person, bias based on the person’s name, sex, race, whatever. … Bias exists. It cannot be denied. … It is not that all managers from their heart are trying to increase diversity.”

Getting ahead in S&E occupations depends on both “human capital” (what you know) and “social capital” (whom you know). Social networks tend to be personal, with well defined but invisible boundaries. One can participate in a social network only if invited; one does not join the network of one’s own accord. Generally, White male managers network with White male employees to build a largely exclusive rapport. These managers rarely interact on a social basis with those who do not share similar cultural or racial/ethnic backgrounds—including Asian Indians. Asian Indian scientists’ and engineers’ human capital lies in higher education, training achievements, and technical skills. However, they will have little social capital if they remain outside the necessary social networks due to differences in nationality, race/ethnicity, language, and culture, and have little or no access to crucial contacts necessary for career advancement.

An oft-repeated comment was that managers/administrators are uncomfortable with people who are unlike themselves. The respondents found that even with their fluency in English, managers/administrators were put off by their distinctive Asian Indian accent. Even differences in mundane issues such as eating habits (being vegetarian, not drinking beer) are noted. “They do not understand other cultures properly, or some detail they do not understand so therefore they become reluctant to promote people who are from other cultures,” said an academia respondent. Another respondent working in industry had a similar view. “Managers tend to go and hire and to promote people to whom they relate, and people who look and feel and talk like them. I think this is one of biggest challenges.” An industry respondent echoed that sentiment. “The biggest thing they face is they lack of understanding of candidates who are different. … If they hire somebody of their group, they will be more comfortable with them.” A respondent working in an industrial company said that she has seen first-hand managers’ reluctance to hire people outside their cultural comfort zone. She said: “I have observed this a lot, when people in management try to promote, they will look toward their immediate circle to see who is competent, and if it is somebody like them, they feel more comfortable than if it is somebody very different from them. And so they keep promoting people from within their own circle, people who are just like them.”

Asian Indians working in national laboratories also pointed out that managers face structural barriers in finding qualified applicants who could pass the security clearance for classified projects. Similarly, the respondents working in industrial companies noted that due to being
foreign-born, they were barred from supervising some high-level projects. In other words, citizenship and nationality requirements limit some Asian Indian immigrants from moving up the chain of command.

Social/Cultural Challenges

One-third respondents believed that their cultural values, social differences, accents, and communication skills prevent them from seeking managerial positions (table 1). If Asian Indians do not seek top decision making positions, it results into a limited pool of qualified candidates from which managers can choose from.

Several scholars have identified work-related issues on which modern American and traditional Asian cultures differ. For example, American individualism emphasizes the primacy of the individual and the virtues of self-reliance and independence. It promotes individual achievement, values particularized thinking, and encourages personal choices. It maintains that one person's goals should not be sacrificed for the goals of any other. In contrast, traditional Asian Indian collectivism considers the group as the primary unit, and individual identity is determined by the needs of the group. Collectivism measures success on a group level, encourages adherence to group norms, and supports consensus by committee. Asian Indian culture emphasizes abandoning individual goals when necessary for the collective good.

Many Asian Indians believe that their cultural values were a liability in American S&E organizations because one has to perpetually promote his or her achievements in order to advance. Asian Indians said they were not accustomed to bragging about their accomplishments, but that not doing so hurt their chances for advancement. Being raised to practice modesty, humility, unpretentiousness, reservation, and to have respect for wisdom, intelligence, and aptitude inevitably leads to a particular sort of work culture. The Asian Indian culture promotes the concept that working hard and allowing a superior performance to speak for itself is the path to success, and as a result, Asian Indians do not brag about their achievements. They avoid conflict with those in higher positions, are patient, and hope for the best outcome. But that unobtrusive and reserved approach often works against them in American S&E organizations, which reward aggressive and forthright individuals who doggedly pursue high-profile projects and promotions. A respondent from academia said, “I see, just because of cultural background, for example, a lot of [Asian] Indians seem to follow more than take initiative and drive.” Another respondent from a national laboratory said, “What is more important is that [Asian] Indians should be very, very aggressive in their work. ... They should make sure that their opinions are accounted for.” A respondent working in industry said, “In a senior management position, you need to be able to socialize, interact, make yourself visible to the directors and vice presidents and other people in high positions in the company. I am personally not a very outgoing, socializing kind of person. I am more of a home loving kind of person. I definitely think this is one thing that is standing in the way of my wanting to really climb up the vertical ladder.” The gap becomes more prominent with employees from different countries. A respondent who returned to India found that among foreign-born employees, “Israeli employees were more assertive, used to push than [Asian] Indian employees who were less outgoing and unwilling to speak up.”
Education is an important factor for success in the U.S. professional labor market, and proficiency in the English language plays a key role as human capital.\textsuperscript{3,14} As an important aspect of overall professionalism, good communication requires more than a solid command of the English language. Strong accents can make it difficult for others to understand the speaker. By and large, managerial/administrative occupations require greater fluency in English and demand mastery for effective communication. As a result, differences in linguistic ability can diminish Asian Indians’ human capital.

Without mastering the expression of ideas in speech and writing, Asian Indians’ human capital can be devalued, even in highly technical S&E organizations. Asian Indians’ own insecurities regarding their language difficulties, including heavy accents and a distinctive communication style, may negatively affect their desire to switch from the technical to the managerial ladder. Interview respondents acknowledged that Asian Indian scientists and engineers are likely to encounter some language hurdles, given that English is their second language and they have accents. As a result, they consciously or unconsciously tend to cluster in those positions where technical and quantitative skills are needed more than colloquial English and communication skills. An academia respondent acknowledged that language is often an important aspect of an administrative position. “There have been situations where a person was not hired because he was not articulate, and, despite having come from one of the best schools, with recommendations from top people, being able to articulate yourself is critical,” he said. A national laboratory respondent believed communication to be a big barrier for Asian Indians. “You cannot promote a person that cannot communicate. . . . I would not put somebody in a managerial position if I knew that person could not speak and communicate well. So, I do not expect managers [here] to do the same,” she said.

Due to cultural and language differences, if Asian Indians have a low tendency for seeking managerial positions, then S&E organizations will have a shortage of aspirants. Accordingly some respondents said that the greatest challenge was that there were not enough qualified Asian Indian candidates to choose from. One academia respondent said: “We are not facing any challenges – in fact we are not getting anyone to apply.” Another respondent working in an industrial company said, “When you have very low applicants, it is very hard to find good people to lead the organization.”

Concluding Remarks

Most scholarly work has assumed an ethnically homogeneous S&E community in the United States. When researchers have examined workforce diversity in S&E, they have focused on the demographic factors or on the education level rather than on the immigrants’ experiences in S&E organizations. This study shows the complexities of Asian Indian scientists and engineers as they provide a presence for both structural/institutional and social/cultural factors which play a role in their career mobility.

The concurrent presence of two interrelated tendencies makes it difficult to isolate a single cause for the relatively low representation of Asian Indian scientists and engineers in high-level management positions. One tendency is the widely held perception of managers/administrators that Asian Indian scientists and engineers are not suited for managerial/administrative positions,
and the second is the self-perception of Asian Indian scientists and engineers that they are better suited for the technical positions.

Leadership training, career development, mentoring, and networking need to address the social/cultural barriers Asian Indian scientists and engineers face and provide opportunities necessary for Asian Indian scientists and engineers to move up within their organizations. Extensive employee training and evaluation could improve their knowledge, skills, and confidence and help them overcome social/cultural barriers. Career development programs could also build Asian Indians’ managerial/administrative skills so they can be successful in a changing competitive environment and give them tools and skills to realize their full potential.

To deal with structural/institutional barriers, managers/administrators must change their mindsets. They need to learn to look at the skills, talents, and views that different people bring to an organization. Managers/administrators should identify prospective high-level managers among Asian Indian scientists and engineers at all levels of an organization. Qualified Asian Indian scientists and engineers ought to be placed on the fast track, and encouraged to go through leadership training and career development programs. It is important that development programs set employees on a long-term career path.

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